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ABSTRACT

Contents of the report include: terms of reference and membership of the Conference of University Administrators of the United Kingdom; the present size and shape of higher education; the demand for higher education; demographic factors; official projections of student numbers since 1963; comments on enrollment projection methods currently used; external factors affecting higher education development; alternative enrollment projections to 1994; and the implications for higher education. (MSE)

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TABLE 30

Home and overseas students in full-time higher education: past trends and future needs
Great Britain 1924/5–1985/6

	Thousands
1924/25	*61*
1938/39	*69*
1954/55	*122*
1955/56	*128*
1956/57	*137*
1957/58	*148*
1958/59	*160*
1959/60	*170*
1960/61	*179*
1961/62	*193*
1962/63	*216*
1963/64	238
1964/65	262
1965/66	290
1966/67	312
1967/68	328
1968/69	335
1969/70	339
1970/71	344
1971/72	356
1972/73	
1973/74	
1974/75	
1975/76	
1976/77	
1977/78	
1978/79	
1979/80	538
1980/81	(596)
1981/82	(627)
1982/83	(655)
1983/84	(678)
1984/85	(697)
1985/86	

Source: 1924/25–1938/39: See Appendix One, Annex EE
1954/55–1985/86: See Appendix One, Part IV, Tables 46 and 53, and Annex Tables Z. 16 and Z. 17

Notes: 1. Figures for 1924/25 and 1938/39 are estimated.
2. Figures for 1954/55 to 1962/63 represent actual numbers (1962/63 data being provisional).
3. Figures for 1963/64 to 1980/81 are recommended.
4. Figures for 1981/82 to 1985/86 are estimates of places likely to be needed but are not put forward as recommendations.

180. These figures cover the next seventeen years, with provisional estimates for five years more. As we shall argue in later chapters, those for the next ten years, up to 1973/4, demonstrate the need for urgent action. They

Conference of University Administrators

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Interim Report 1977

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Front cover: Robbins Report, Table 30 (page 69)
Back cover: Robbins Report, Chart D (page 68)

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Group on Forecasting and University Expansion

Interim Report 1977

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1. Terms of reference and membership of the Group

1. The Group was formally established by the C.U.A. Executive Committee at its meeting on 30 April 1976, with the following terms of reference:

   (a) To review the actual and forecast level of enrolments in higher education (within the United Kingdom) in general and the university sector in particular;

   (b) To submit a report to the Executive Committee by 1 February 1977.

   The Executive Committee later agreed to extend the reporting date to 31 March 1977. The Group submitted an interim report in January 1977.

2. The membership of the Group is as follows:

M. L. Shattock	Academic Registrar, Warwick (Chairman)
Dr. J. C. Axe	Administrative Officer, St. George's Hospital Medical School, London
R. V. Barnes	Assistant Registrar, University College, Swansea
R. B. Behenna	Secretary of Faculties, Exeter
R. M. G. Clark	Assistant Registrar, Reading
J. H. Farrant	Planning Officer, Sussex
Dr. B. R. Francis	Administrative Assistant (Academic Planning), Open University
Miss C. Holme	Universities Statistical Record
D. A. Hoult	Assistant Registrar, Hull
L. R. Kay	Secretary, U.C.C.A.
M. G. E. Paulson-Ellis	Secretary (Academic Administration), Strathclyde
I. H. C. Powell	Deputy Registrar (Academic), Salford
Dr. B. J. R. Taylor	Planning Officer, Bath
P. A. Walker	Administrative Assistant, Warwick
D. R. Holmes	Assistant Registrar, Warwick (Secretary)

Before the Group began its work, invitations to participate were made to the secretariats of U.C.C.A. and the Committee of Vice-Chancellors and Principals (both of which contain C.U.A. members). The Secretary of U.C.C.A. attended in a personal capacity and became a member of the Group. The secretariat of the C.V.C.Ps. received our papers and Miss T. Hall attended our latest meeting as an observer.

3. We wish to record our thanks to U.C.C.A. for the generous way in which it responded to requests for statistical material, to the officials of the Department of Education and Science who agreed to meet us and provided us with valuable statistical material and to the Office of Population and Census Surveys for giving us access to certain material in advance of publication. We must emphasise, however, that we take full responsibility for the way the various pieces of material have been used and the conclusions we have drawn from them.

2. Introduction

4. From the outset we recognised that "to review the actual and forecast level of enrolments in higher education ..." was only a first step to trying to spell out some of the implications of the figures for universities, and higher education generally. It is clear that the Government is already aware of some of them. The Secretary of State referred to the implications for schools in an address to the C.L.E.A. Conference in July 1976:(1)

> "A major factor underlying the White Paper is the protracted decline in the school population from the present level of 9 million pupils to a figure that could well be 1½ million below that in the next decade. It is essential that we plan now to manage the education service during years of declining population no less systematically and deliberately than we have done to cope successfully with many years of growth. This fundamental change in demography poses difficult problems ..."

The Permanent Secretary went further in an address to the Society of Education Officers in January 1977:(2)

> "There are (in Great Britain) at the present time about 800,000 18 year olds. By the early 1980s this age group will have increased to a peak of well over 900,000: by the early 1990s it will have fallen to about 660,000 and will still be falling. This clearly poses an excruciatingly difficult exercise in planning."

5. We have already seen how the D.E.S. has taken drastic action to reduce the numbers of colleges of education from 154 in 1975 to a forecast 70 to 75 institutions involved in teacher training by 1981, with a reduction in the teacher training population from 100,000 in 1976 to 45,000 in 1981. The implications for the staff of these colleges are too well known to need reiteration here. Anyone who has worked in or with a college of education during this period will know that the strains inevitable in such a situation have been enormously exacerbated by the colleges' complete unpreparedness for changes which were first signalled seven or eight years ago.

6. The colleges of education are a special case because of their dependence on teaching manpower requirements but it would be short-sighted not to realise that it is only a matter of time before higher education as a whole will be confronted by the problems of demography. The colleges of education might seem especially ripe for rationalisation with only 100,000 students spread over 163 institutions until it is remembered that since 1966 we have seen an unprecendented expansion in the numbers of institutions in the so called 'public sector' of higher education with the creation of 30 polytechnics and more recently 44 institutes or colleges of higher education. The existence of two sectors of higher education, the universities and Advanced Further Education, competing for students and resources adds another dimension to the problem.

7. This report does not attempt to deal with such large problems but they form some of the essential background considerations. The main purpose of the report is to spell out and provide some explanation of the statistical pointers so that colleague administrators, and perhaps those involved more generally in the administration of higher education, can obtain a broader understanding of some of the issues that will undoubtedly figure in the debate about the shape and size of higher education in the future. We do not pretend, in spite of the Group's title, to be forecasters in any sense,

but have restricted ourselves to identifying some of the more important trends in the demand for higher education and to drawing some tentative conclusions which are intended to serve as a framework for future discussion. We have labelled our report 'Interim' partly because we believe there is room for a good deal more work and partly because we are at a time of particularly rapid change so that many of the trends we have identified need monitoring over a period before firmer conclusions can be reached.

8. Perhaps our main reaction to the information we have been able to bring together is one of surprise that even after the improvements in the presentation of educational statistics that followed the Robbins Report so little data are readily available to help the planners outside Government to form a view of the likely trends. It is seven years since the D.E.S. issued its ill-fated Education Planning Paper No. 2 and the body of information required is perhaps less easily accessible now than ten years ago. Moreover in spite of its obvious importance very little work seems to have been done on quite basic aspects of higher education planning, or if it has, it has not been seen outside the D.E.S. We have to support, for example, Peter Armitage's contention that "nobody can be authoritative about the demand for higher education because it has never been properly studied".(3) The fact that Gareth Williams even feels the need to argue that empirical research, such as attitude surveys, designed to spot trends at an early stage, can be more valuable for planning than extrapolations from past data(4) tells us something about the state of the art. Nobody who has studied the statistics available, however, can doubt that higher education is approaching a watershed quite as significant as that which prompted the Robbins enquiry, but this time the climate is considerably less optimistic and some of the liberal certainties of the early 1960s have been severely shaken. We hope that by examining the evidence that is currently available we can alert our colleagues to some of the difficult decisions that lie ahead.

References

(1) Secretary of State, D.E.S., speech to the C.L.E.A. Conference, July 1976.

(2) Permanent Secretary, D.E.S., speech to the Society of Education Officers, January 1977.

(3) Peter Armitage, "Facing facts and jumping to conclusions", Higher Education Review, Autumn 1974.

(4) Gareth Williams, "Reflections on the educational choices of fifth and sixth formers", Trends in Education, September 1976.

3. The present size and shape of higher education

9. At first sight a description of the present size and shape of higher education would seem to present few difficulties. There is, however, no single and consistent definition of higher education. The nearest is that higher education comprises courses of study, normally leading to a qualification awarded by a validating body, and above the standard required for the Advanced Level of the General Certificate of Education (England and Wales) or for the Higher Grade of the Scottish Certificate of Education or for the Ordinary National Certificate. Two specific lists of qualifications meeting those criteria exist for stated purposes. One is the list of 'designated courses' for which a local education authority is obliged to make a mandatory award to a student (so long as he meets certain conditions of residence, etc.) under the Local Education Authorities Awards Regulations 1975. The Regulations list certain categories of courses, leaving to the Secretary of State the discretion to designate other courses(1). The other is the list of qualifications recognised by the Burnham Committees as equivalent in standard to a university degree(2). The definition followed as a general guide for the first includes the second.

10. 'Higher education' is pursued in the following types of institution or context:(3)

(a) Universities in receipt of grants made or recommended by the University Grants Committee (44 in number; in addition, the London Graduate School of Business Studies, the Manchester Business School and the University of Manchester Institute of Science & Technology receive their grants direct from the U.G.C.). All university students studying for first degrees, first diplomas, higher degrees and higher diplomas are classified as in higher education. There may be students taking courses 'not of a university standard', but this category has lapsed since 1971. Courses conducted by universities as 'Responsible Bodies' for adult education and directly grant-aided by the D.E.S. are not classified as higher education. The statistics of all but the latter courses appear in U.G.C. Statistics of Education, vol. 6, Universities.

(b) Institutions empowered by Royal Charter to award degrees and grant-aided by the D.E.S., namely the Open University, Cranfield Institute of Technology and the Royal College of Art. All their courses are classified as higher education. Statistics of the last two are included in D.E.S., Statistics of Education, vol. 3, Further Education. The Open University is not yet incorporated in Statistics of Education, but appears briefly in Education Statistics for the United Kingdom 1974, tables 44-6.

(c) Polytechnics (30) and other further education colleges (about 200) provided or aided by local education authorities in England and Wales, and a small number of national colleges grant-aided directly by the D.E.S. (e.g. National College of Agricultural Engineering (now incorporated in Cranfield), National Leathersellers College, agricultural colleges) insofar as they offer 'advanced courses' which are defined in detail for the purpose of statistical returns and grant calculations. In summary, they are:

> courses followed by students undertaking postgraduate, post-diploma or research work; courses in preparation for university first and higher degrees, for C.N.A.A. first and higher degrees, (including the

former Diploma and Higher Diploma in Art and Design), for the Higher National Diploma or Certificate, for the Diploma in Management Studies, or for a final professional examination or College Diploma or Associateship if above the standard of instruction required for the Ordinary National Certificate or General Certificate of Education (Advanced level), or any course of study of an equivalent standard.

The statistics appear in D.E.S., Statistics of Education, vol. 3, Further Education.

(d) Central Institutions grant-aided by the Scottish Education Department (10 colleges) or the Department of Agriculture and Fisheries for Scotland (3 colleges), further education day colleges provided by Scottish education authorities and colleges of education grant-aided by S.E.D., each insofar as it offers 'advanced courses' which are defined as in (c) above. The statistics appear in S.E.D, Scottish Education Statistics.

(e) Colleges of Education provided in England and Wales by local education authorities and (with grant-in-aid from the D.E.S.) several of the churches. All their courses of teacher training are classified as higher education. The Teacher Training Regulations under which the colleges operated were repealed in 1975 and the Further Education Regulations S.I. 1975/1054 now apply to all institutions in (c) and (e). The latest detailed statistics appear in D.E.S. Statistics of Education, vol. 4, Teachers, and relate to autumn 1974 when there were 150 colleges of education and four colleges of education (technical), that is, before any 'diversified', non-teacher training courses had been started.

(f) Institutions grant-aided or maintained by Government departments other than the D.E.S. (e.g. Royal Military College of Science). Some of their students are registered for, e.g., C.N.A.A. degrees, but no statistics are available.

(g) Institutions not publicly financed, but offering courses of higher education either for 'national' awards (e.g. C.N.A.A. degrees) or of recognised standing. Examples are the Architectural Association School of Architecture, some colleges of music and drama, theological colleges or the University College, Buckingham. No statistics are available.

(h) Private Study (including through correspondence colleges or in-service training by employers), usually for qualifications for which courses are also offered by institutions covered by (c), (d) and (f), e.g. University of London External degrees, final examinations of professional institutes. Limited statistics only are available.

(b), (c), (d) and (e), but excluding the Open University, constitute Advanced Further Education, often called the 'public sector' of higher education.

11. It will be apparent that a comprehensive enumeration of the students in 'higher education' at a recent date is not readily available. The Robbins Committee made the attempt, generally with success, but the appendices to its report show what a large task was entailed(4). The Robbins figures related to the year 1961-2. Since then there has been a considerable improvement in the quantity and consistency of the statistics published by D.E.S., U.G.C. and S.E.D., but they still leave much to be desired. We

believe that a thorough review of published Government statistics in higher education is needed to iron out inconsistencies and make them more useful to those like ourselves who are trying to use them as some kind of data base for forward planning purposes.

12. Table 1 represents a bringing together of the available statistics to give the numbers of students in higher education in 1974-5, the latest year for which statistics have been published (a time lag of more than two years). It should be noted that the distinction between undergraduate and postgraduate levels, as adopted in universities (i.e. courses at the latter level require a first degree or approximately equivalent qualification as a condition of entry), seems to correspond with the distinction in Advanced F.E. between 'first stage advanced courses' and 'later stage advanced courses' (to which a student normally proceeds only after completing a first stage advanced course); though it would be quite possible for courses to be offered at two levels within the undergraduate level. We believe there are significant differences in the definitions for inclusion of short-course students in the official statistics which have the effect of understating those in universities and colleges of education as compared with further education.

13. The total of full-time (including sandwich) students in Table 1(A) and (B) (i.e. 487,000) seems to correspond to the planning target of 560,000 students in 1981-2 announced by the Department of Education and Science in February 1977, and encompasses the institutions listed in paragraph 10, **(a)**-(e), excluding the Open University. There were 154,000 part-time students in the same institutions. Table 1(C) also gives figures for the two major remaining categories of students in higher education (the Open University and London External): 67,000. There remained unaccounted for the students falling into category (f) in paragraph 10 and most of those in category (g) - perhaps 4,000 full-time - and in (h) studying other than for London external degrees. Students working for professional qualifications by private study were examined by the Robbins Committee which estimated their number at about 29,000, mainly in the commercial and legal fields(5). Since 1962, the opportunities to pursue these qualifications at universities and F.E. colleges have greatly expanded, and indeed a few professional institutes now require candidates to have attended formal courses. On the other hand, more qualifications might now meet the Robbins Committee's definition, as institutes have raised their entry qualifications to 'A' levels, and employers' 'in-house' training centres have burgeoned, especially in accountancy(6). Hence repetition of the Robbins figure of 29,000 is but a guess.

14. In sum these figures suggest that during 1974-5 some 741,000 people in Great Britain were engaged in the pursuit of higher education qualifications or in courses of similar standard. The significance of this total should not be underestimated. Higher education is in fact a good deal larger than might superficially be thought, and one effect of the way Government statistics are customarily presented is to 'lose', in 1974-5 for example, about 250,000 people who would certainly see themselves as students in higher education. One of the reasons why it is sometimes easy to be confused about manpower forecasts or simple comparisons between staff and student numbers in higher education is that there is no consistent pattern of presenting the statistics. Our rating in the various international comparisons might also be affected if these 'lost' numbers were included.

15. We have tried to measure the relative contributions of the various sectors of higher education to the production of these numbers. The simplest method

TABLE 1

Numbers of students pursuing courses of higher education, by mode of study, sector, and level, academic year 1974-5

(A) England and Wales

	Full-Time		Sandwich		Part-Time				Total
	Male	Female	Male	Female	Male	Female			
1.Universities	(UGC List)								
2.Undergrad.	110855	56783	Included		1242	1268			170148
3.Postgrad.	32055	11128	in Full-Time		14128	4205			61516
4.Total	142910	67911			15370	5473			231664
5.Further Education (including Polytechnics)					P/T Day		P/T Evening Only		
6.First Deg.	21321	13266	17031	2587	2368	462	1539	525	59099
7.HND/C	4714	1626	9819	1738	26573	4176	3479	333	52458
8.Prof.Qual.	9896	4693	2014	387	28828	4202	20625	2915	73560
9.Coll.Dip/Cert	4666	2760	1243	262	1840	380	434	139	11724
10.Other	1116	2527	9	4	1639	2047	587	947	8876
11.(Total First Stage)	41713	24872	30116	4978	61248	11267	26664	4859	205717
12.Higher Deg.	1474	301	31	7	619	66	299	49	2840
13.PG & Res.	1024	503	23	1	4209	314	1639	141	7850
14.ATC/D	293	231							484
15.Other	88	38			2581	50	2202	43	5002
16.(Total Later Stage)	2839	1073	54	8	7409	424	4136	233	16176
17.Total	44552	25945	30170	4986	63667	11691	30800	5092	221893
18.Colleges of Education (including Technical)									
19.Initial, General & For Serving Teachers									
20.1/2 yr.	970	1404			1302	580			4256
21.3/4 yr.	24842	69233			34	992			95101
22.Specialist,1yr	1096	699							1795
23.Suppl.Radv.	375	518							893
24.O/S Student course	159	271							430
25.Postgraduate	2070	2598							4668
26.Total	29512	74723			1336	1572			107143
27.Totals									
28.First Deg. & Equiv.	179639	153262	30116	4978	63826	14107	26664	4859	477447
29.Postgrad. & Equiv.	37339	15317	54	8	21637	4629	4136	233	83253
30.All	216974	168979	30170	4986	96303	18736	30800	5092	560700
31.Male & Female	385553		36156		104039		35892		
32.All Full-time	420709								
33.All Part-time						139991			

(B) Scotland

	Full-Time (incl. Sandwich)		Part-Time				Total
	Male	Female	Male	Female			
1. Universities (UGC List)							
2. Undergrad.	21624	13433	340	247			35644
3. Postgrad.	3516	1171	2241	474			7402
4. Total	25140	14604	2581	721			43046
5. Further Education							
6.	(including Short Full-Time)		Day & Block Release Part-Time Day		Evening Only		
7. First Deg.	3533		120				3653
8. Associate of Cent. Inst.	83						83
9. Diploma of Cent. Inst.	3648		46				3694
10. HND/C	2110		3205		528		5843
11. Scottish Bus. Ed. Counc.	1777		1089		567		3433
12. Other Recog. Qual.	2926		3041		1743		7710
13. Other	757		192		314		1263
14. Total	8989	5845	6656	1103	2801	285	25679
15. Colleges of Education (Teacher Training Quals. Only: Other Courses in Advanced FE)							
16. Non-Grad.	1878	7684					9562
17. Graduate	1027	1264					2291
18. Total	2905	8948					11853
19. All	37034	29397	9237	1824	2801	285	80578
20. Male & Female	66431		11061		3086		
21. All Full-time	66431						
22. All Part-time					14147		

(C) The Open University, and University of London External Students

		Undergrad. Level	Postgrad. Level	Total
Open University	Part-Time	55617	283	55900
	Full-Time		35	35
London University, External, Private Study		8842	2061	10903
	Total	64459	2379	66838

Notes to Table 1(A)

Sources: lines 1-4: Statistics of Education, 1974, 6, tables ., 13, 14.
5-17: Statistics of Education, 1974, 3, tables 3, 30.
18-26: Statistics of Education, 1974, 4, table 3, & note.

Lines 1-14: Sandwich students in universities are given in total for GB (tab. 12): undergraduate level 11060 men, 2220 women; postgraduate 26 men, 4 women. They are probably all in English and Welsh universities.

Line 6 includes Dip. AD students (for earlier years separately recorded).

Lines 10, 15: line 15 includes only 1st year students (from table 30), so line 10 includes students in the 2nd year of 'other' later stage courses.

Line 10 appears to include teacher trai-ing students in the seven polytechnic departments of education.

Line 13: 5625 of these students are on DMS courses.

Line 14: the Art Teachers Certificate and Diploma may also be taken at three universities (London, Newcastle, Reading), hence presumably the difference from Statistics of Education, 1974, 4, table 5.

Line 23 presumably includes students on advanced teacher training courses in FE colleges, so there is some double counting.

Line 29 is total of lines 3, 16, 23 and 25.

Notes to Table 1(B)

Sources: lines 1-4: Statistics of Education, 1974, 6, tables 1, 13, 14.
5-14: Statistics of Education, 1974, tables 39, 27.
15-19: SES, 1974, table 69.

Line 6: short full-time courses are of 18 weeks' duration or less.

Line 14: table 27 does not correspond with table 39 as between types of part-time study.

Notes to Table 1(C)

Sources: Open University, and University of London External Department (with thanks to officers of both for specially supplying these statistics). Open University undergraduate level includes 6259 students taking post-experience courses.

is to convert the absolute numbers of students into 'student year equivalents', by applying to the numbers of part-time students the ratio between the time taken to complete the course compared with how long would be taken if the course were pursued full-time. For this purpose, full-time and sandwich students are counted as 1.0, part-time (day in F.E.) and Open University as 0.8, part-time evening, London University External and other private study as 0.4. This is obviously a pretty crude method which could be refined by further study but we believe it gives a rather more realistic assessment of the contribution of the various sectors than one based on full-time numbers only which are the figures normally used. The results are as follows:

TABLE 2

Numbers of students in higher education in 1974-75 and 'student year equivalents' (Great Britain)

	Full-time		Part-time		Student year equivalents	
	Number	%	Number	%	Number	%
Universities (U.G.C. list)	250565	51.0	24145	9.7	265052	42.4
Further Education	120487	24.5	127085	50.9	188940	30.2
Colleges of Education	116088	23.6	2908	1.2	117833	18.8
Open University	35	-	55900	22.4	33575	5.4
London University, external			10903	4.4	4360	0.7
Other institutions	4000	0.8			4000	0.6
Other private study			29000	11.6	11600	1.9
Total	491175	100	249941	100	625355	100

16. In this Report we are primarily concerned with full-time students in the University and the Advanced F.E. sectors (including colleges of education). If the ratios above are roughly right full-time students in these sectors represented about 79% of the student year equivalents in 1974-5 - though only 66% of the individual students. The existence of the other 34% should not be forgotten.

17. Table 3(A) gives the number of entrants to higher education in 1974-5, by age at 31 December 1974. These figures include overseas students, of whose numbers only estimates can be made and whose age distribution is not given in official statistics. However, a rough assumption can be made that the overseas intake was evenly divided between those aged 20 or under and those aged over 20[7]. The number of full-time home entrants aged 20 or under in autumn 1974 which is reached by these calculations is 108,060 (56,560 to universities, 51,500 to further education) - Table 3(D). An important implication of Table 3(D) is that a quarter of the intake is of students aged 21 or more. The proportion of older entrants has probably been rising (see para. 21), and the demand for 'deferred' entry to higher education must clearly be taken into account in assessing total demand.

TABLE 3

Numbers of entrants to/first year students on full-time/sandwich courses of higher education (undergraduate level), academic year 1974-75, by sex and age at 31 December 1974

(A)	England and Wales							Scotland		
	UNIVS	Further Education			Teacher Training		Total			
		1st Degrees	HND/ HNC	Other Recognised Qualifications	General Courses 1 or 2 year	3 or 4 year		UNIVS	Further Education	Teacher Training non-graduates
18 M	14520	3134	1406	1223		1836	22119	3978	1541	
F	9055	1824	619	734		9895	22127	3162	1415	
19 M	13029	4139	1682	1417	3	2126	22396	865	675	
F	6734	2171	485	622	9	6235	16256	571	335	
20 M	4355	2451	984	981	13	966	9750	318	331	
F	1865	1023	215	500	31	1172	4806	237	150	
21 M	4757	2957	1670	3050	118	1132	13704	755	701	
24 F	1760	786	237	1370	167	1398	5718	284	371	
25 M	2261	1334	967	4069	302	1028	9961	545	532	
F	1407	611	93	2083	596	4043	8833	228	363	
M	2						2			
N/K F	1						1			
ot. M	38924	14015	6729	10740	463	7088	77932	644	3780	662
F	20822	6415	1649	5309	803	22743	57741	4482	2634	2732
M&F	59746	20430	8378	16049	1239	29831	135673	10943	6414	3394
		44857			31070			20751		

(B)	Number of Overseas Students Included Above								
M	2960	.....	5300	.....	10		8270	440	130	
F	700	.....	1040	.....	40		1780	100	20	
M&F	3660	1700	1640	3000	50		10050	540	150	0

(C) Number of Home Students (rounded)									
M	35960	.....	26180	.....	7510	69650	6020	3650	660
F	20120	.....	12340	.....	23510	55970	4380	2610	2730
M&F	56080	18730	6740	13050	31020	125620	10400	6260	3390

(D) Number of Home Students By Age

	England and Wales				Scotland				GB
Age	Univs.	FE	TT	Total	Univs.	FE	TT	Total	Total
20 or under	47700	22440	22260	92400	8860	4370	2430	15660	108060
21 or over	8380	16080	8760	33220	1540	1890	960	4390	37610
Total	56080	38520	31020	125620	10400	6260	3390	20050	145670
21 or more as % of total	14.9	41.7	28.2	26.4	14.8	30.2	28.3*	21.9	25.7

* Assumed to be the same as for England & Wales, in the absence of age distribution

Sources: Universities: Statistics of Education, 1974, 6, table 1.
F.E., England & Wales: Statistics of Education, 1974, 3, table 18, 42 except that teacher training students in Polytechnic departments of education (as in Statistics of Education, 1974, 4, table 4) have been deducted from the totals in 'other recognised qualifications'.
Teacher training, England & Wales: Statistics of Education, 1974, 4, table 4.
F.E., Scotland: SE, 1974, table 30, 44.
Teacher training, Scotland: SE, 1974, table 70.

TABLE 4

Highest Qualifications Held By Specific Groups of Home Entrants, 1974 (percentages)

	'A' level score	Universities (GB)		CNAA (E & W)		Teacher Training (E & W)		Total
		Male	Female	Male	Female	Male	Female	
3 'A' levels	15-13	18.5	19.4	0.6	1.4			
	12-9	31.6	36.1	7.0	10.1			
	8-3	25.2	19.8	28.8	33.1			
	(Total)	(75.3)	(75.2)	(36.4)	(44.7)	13.4	14.5	52.4
2 'A' levels	10-8	1.9	4.4	1.4	2.5			
	7-5	6.9	7.4	11.8	17.1			
	4-2	4.5	3.3	22.0	22.1			
	(Total)	(13.3)	(15.0)	(35.2)	(41.8)	26.2	25.8	20.8
1 'A' level		*	*	1.9	2.7	28.7	27.6	8.2
'O' levels/CSE		*	*	*	*	24.5	26.2	7.3
ONC/D		1.8	0.1	11.2	2.5	*	*	2.0
HNC/D		0.9	0.1	8.1	1.5	*	*	1.3
Degree		0.5	0.1	7.2	6.8	7.1	6.0	7.9
Other		8.2	9.4					
		100	100	100	100	100	100	100
N =		38040	21741	11960	4228	7086	22779	105834

Sources: Universities: UCCA, Statistical Supplement to the Twelfth Report 1973-74 (1975), table G1.
CNAA: Statistics of Education, 1974, 3, table 58.
Teacher-training: Statistics of Education, 1974, 4, table 2.

Notes to Table 4

The 'Universities' figures are based on a one-in-ten sample of all accepted candidates classified as 'home' on the basis of the country of domicile on their application forms. 'N' comprises the total populations, not the sample; full-time students only. The 'CNAA' figures cover entrants to CNAA first degree courses (other than Education) who are 'home' on the fees definition. About 1500 part-time students are included, but students on Art and Design courses are excluded.

The 'Teacher-training' figures refer only to full-time entrants to three and four year courses of initial training and include overseas students. Otherwise the categories of student included on Table 3 but not covered in this Table are: all Advanced F.E. and teacher training entrants in Scotland, and entrants to Advanced F.E. courses other than CNAA first degrees in England and Wales.

* Any students in this category are included in 'Other'. 'Other' includes Scottish Highers.

18. The available information on entrants' previous educational attainments is presented in Table 4. It will be apparent from the note to it that the populations on which it is based are not precisely co-terminous with those in Table 3(D), but a 'sample' of over 105,000 should be a good guide. The main point to note from Table 4 is that at least 15½% (or 16350) of entrants had less than what is normally regarded as the minimum entry qualification to higher education, namely two 'A' levels. Although the statistics do not show them, universities admitted a few such candidates, but these students are overwhelmingly in teacher training, for which the minimum entry requirement in England and Wales in 1974-5 was still five G.C.E. 'O' level passes.

References

(1) S.I. 1975/1207, regulation 6. See also D.E.S. Circular No. 11/75, Awards to Students, Appendix 1 and D.E.S. Education Information, Designated Courses. Courses designated as comparable to first degree courses for the purposes of awards (revised November 1975).

(2) D.E.S., Scales of Salaries for Teachers in Primary & Secondary Schools, England & Wales 1975, Appendix IV, Annex E, pt. II, pp. 42-9; ... in Establishments for Further Education, England & Wales 1976, Appendix III, Annex C, pt. II, pp. 31-9.

(3) A particular statistical difficulty which runs through our Report is the inclusion of figures for Northern Ireland. Statistics deriving from U.C.C.A. include N. Ireland. Elsewhere N. Ireland is not included except where the United Kingdom is specifically referred to.

(4) Higher Education, Report of the Committee appointed by the Prime Minister under the Chairmanship of Lord Robbins 1961-3, Cmnd. 2154, espec. Appendix 2(A) and (B). Para. 10 is largely based on the definitions at pp. 317-8 of the Report.

(5) Robbins Report, Appendix 2(B), pp. 376, 549 (Table DD.3).

(6) These points are made in W. A. C. Stewart, "The demand for diploma and teacher training courses", in Commonwealth universities and society. The Report of the proceedings of the 11th Congress of the Universities of the Commonwealth (1974), pp. 143-4, 149-50.

(7) This is the age distribution for overseas entrants to universities: U.C.C.A. Statistical Supplement to the Twelth Report 1973-4 (1975) Table B1 (ages at 30 September 1974).

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	'A' level score	Universities (GB)		CNAA (E & W)		Teacher Training (E & W)		Total
		Male	Female	Male	Female	Male	Female	
3 'A' levels	15-13	18.5	19.4	0.6	1.4			
	12-9	31.6	36.1	7.0	10.1			
	8-3	25.2	19.8	28.8	33.1			
	(Total)	(75.3)	(75.2)	(36.4)	(44.7)	13.4	14.5	52.4
2 'A' levels	10-8	1.9	4.4	1.4	2.5			
	7-5	6.9	7.4	11.8	17.1			
	4-2	4.5	3.3	22.0	22.1			
	(Total)	(13.3)	(15.0)	(35.2)	(41.8)	26.2	25.8	20.8
1 'A' level		*	*	1.9	2.7	28.7	27.6	8.2
'O' levels/CSE		*	*	*	*	24.5	26.2	7.3
ONC/D		1.8	0.1	11.2	2.5	*	*	2.0
HNC/D		0.9	0.1	8.1	1.5	*	*	1.3
Degree		0.5	0.1	7.2	6.8	7.1	6.0	7.9
Other		8.2	9.4					
		100	100	100	100	100	100	100
N =		38040	21741	11960	4228	7086	22779	105834

Sources: Universities: UCCA, Statistical Supplement to the Twelfth Report 1973-74 (1975), table G1.
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Degree		0.5	0.1					
Other		8.2	9.4	7.2	6.8	7.1	6.0	7.9
		100	100	100	100	100	100	100
N =		38040	21741	11960	4228	7086	22779	105834

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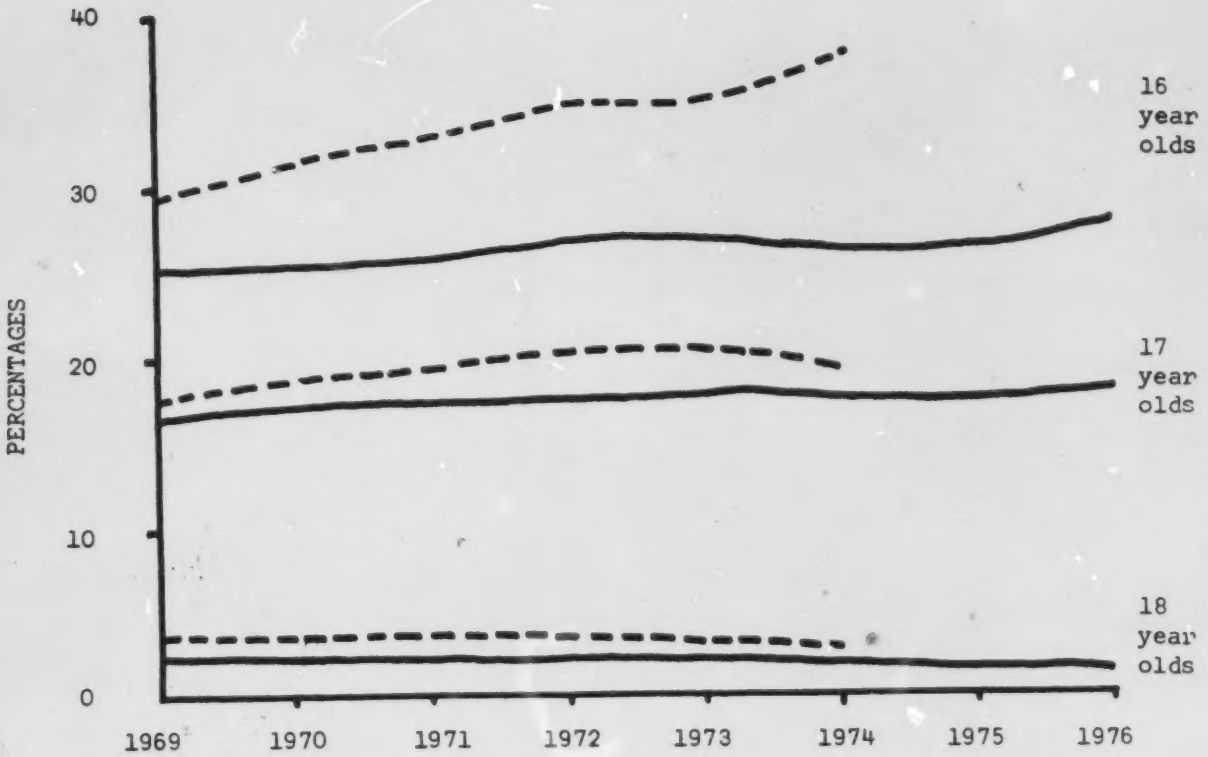
4. The demand for higher education

19. The most important component in trying to forecast the demand for higher education (other than the birth rate itself: Chapter 5) is the staying-on rate at school beyond the mimimum school leaving age. Indeed the D.E.S. attitude survey of 16 and 18 year olds conducted by Gareth Williams concluded that:

> "In general the decision about going on to higher education at 18 appears very much a subsidiary of the earlier decision at 16, despite the fact that staying on means a change of institution."(1)

CHART 1

The percentage of pupils remaining at school beyond the minimum leaving age in England and Wales (——) and Scotland (---)*



Sources: England and Wales D.E.S. Statistical information to C.U.A. Group on Forecasting and University Expansion.

Scotland Scottish Education Statistics 1974, Table 11b.

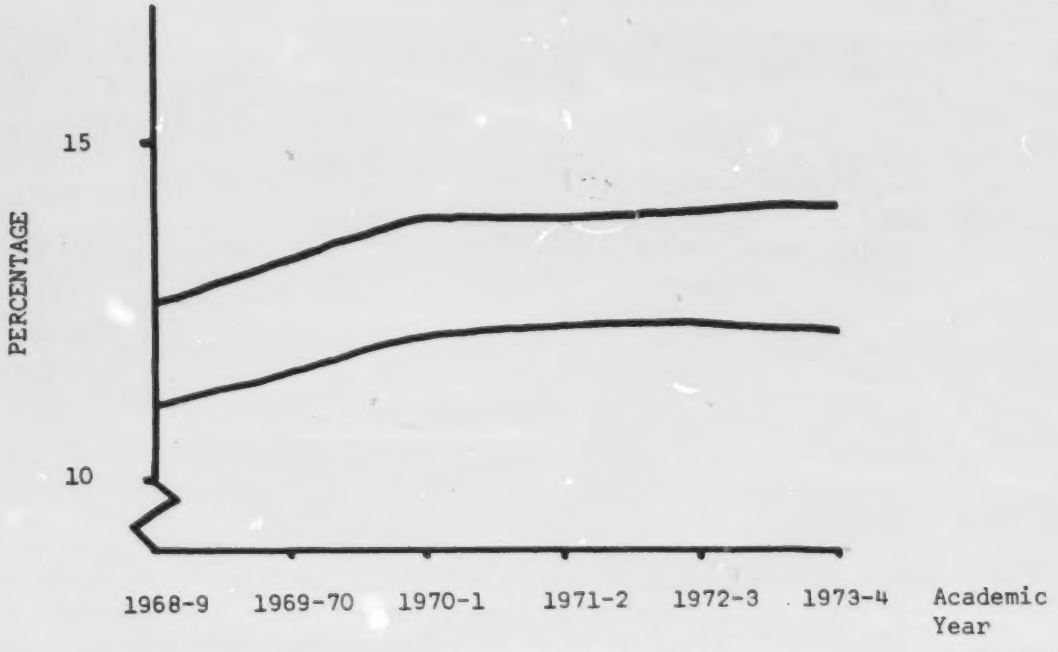
* Figures for 1975 and 1976 are not yet available for Scotland. Scottish figures for 18 year olds refer to those aged 18 and over.

Chart 1 shows the percentage of 16, 17 and 18 year olds from 1969 who remained at school in England and Wales and also in Scotland. The figures for England and Wales are ages at September expressed as a percentage of the relevant 14 year old age group. The Scottish statistics are calculated in a different way and are ages at January expressed as a percentage of the relevant 13 year old age group. These two sets of figures are therefore not directly comparable, but it is the direction of any trends which is of most interest and not absolute values. It can be seen that the percentage of 16 and 17 year olds remaining at school during this period has increased slightly overall, with a fairly substantial increase in the percentage of 16 year old Scottish pupils remaining at school. There has been a small decrease in the percentage of 18 year olds staying on at school. It is, however, the small upward trend of 17 year olds that is most important as they will form the largest group of entrants to higher education.

20. Among the 17 and 18 year olds who stay on at school not all, of course, achieve two or more G.C.E. 'A' level passes (in England and Wales) or three or more Higher grade in the S.C.E. making them eligible for entry to a higher education establishment. Chart 2 illustrates the percentage of pupils of the relevant age group who, in England and Wales, during the academic years 1968-9 to 1973-4, gained two or more 'A' level passes. The percentage in terms of male and female pupils is shown together with the output of students from further education colleges. The latter amounts to approximately 12%. From Chart 2 it can be seen that there is a levelling of the percentages of the relevant age group to around 14% in 1973-4. Comparable data for Scotland indicate that there has been a similar levelling off.

CHART 2

Pupils in England and Wales who gained two or more 'A' level passes whilst attending schools (lower curve) or further educational establishments and schools (higher curve) as a percentage of the relevant age group



Source: Statistics of Education 1974, 2, Table 22.

In the case of the output of pupils with two or more 'A' level passes or three or more H. grade passes, it must be stressed that this is a bare minimum entry required to universities and for many subjects is too low to gain admission. By comparison of the data from Charts 1 and 2, it is clear that a substantial proportion of those pupils who remain at school to take 'A' level examinations gain two or more passes. This would confirm the D.E.S. findings that two-thirds of the academically orientated pupils who entered sixth form intended to continue with further full-time higher education(2).

21. The trend towards older students can be illustrated for universities from figures from U.C.C.A. which, however, calculates age from 30 September in any year, not 31 December as used by D.E.S. and S.E.D. Tables 5 and 6 indicate the changes over a four year period.

TABLE 5

Home candidates for university admission through U.C.C.A. over the age of 19, as a percentage of all candidates

Year of intake	% of candidates accepted			% of all candidates
	Male	Female	Total	
1972	36.9	28.6	34.0	37.2
1973	38.1	29.6	35.1	37.4
1974	38.0	30.9	35.8	36.8
1975	38.6	31.5	36.0	39.6

TABLE 6

Home candidates for university admission through U.C.C.A. over the age of 21, as a percentage of all candidates

Year of Intake	% of candidates accepted			% of all candidates
	Male	Female	Total	
1972	8.0	7.0	7.7	10.9
1973	9.1	7.2	8.4	11.3
1974	9.5	8.3	9.1	11.4
1975	10.1	8.3	9.4	11.9

22. A further trend which can be identified in the university sector through the U.C.C.A. Statistical Supplements is the steady growth in the proportion of women applicants and entrants.

TABLE 7

Home candidates and admissions to universities through U.C.C.A.: proportions of male and female candidates

	Candidates		Admissions	
	Male	Female	Male	Female
1966	70.2	29.8	n.a.	n.a.
1967	70.0	30.0	70.3	29.7
1968	69.8	30.2	69.3	30.7
1969	69.7	30.3	69.1	30.9
1970	68.7	31.3	67.7	32.3
1971	67.7	32.3	66.9	33.1
1972	67.8	32.2	65.8	34.2
1973	65.8	34.2	64.3	35.7
1974	64.8	35.2	63.6	36.4
1975	64.4	35.6	63.6	36.4

23. Chart 2 describes the percentages of the relevant age group in England and Wales who obtain two or more 'A' levels. It is instructive to look more closely at what happens to these students afterwards. Tables 8, 9 and 10 analyse their post-'A' level destinations. Figures are not available at the moment beyond 1974. The increasing proportion of school leavers entering employment after 'A' levels (most clearly indicated in Table 8) can be interpreted in two ways, either that the competition for higher education places was intensifying thus forcing more school leavers onto the labour market or that higher education was losing its attraction as compared to the labour market. Our experience in universities would suggest that the latter interpretation is the more reliable: higher education did in fact seem to lose a little of its post-Robbins glamour to the average sixth former over this period. On the other hand economic factors played a part, with the declining level of the student grant (and the associated adverse publicity) and improving job opportunities for school leavers. We believe that the 1975 and 1976 figures when published will show a reversal of this trend and that in part this will be the result of the rising national unemployment figures persuading school leavers to opt to improve their qualifications rather than seek to start a career with 'A' levels only in an uncertain economic climate.

24. Tables 9 and 10 tell us a good deal about the relati nships between the different sectors of higher education. Advanced F.E., and particularly the polytechnics, are often publicly characterised as the practically orientated sector with their strong industrial connection although in fact the great

TABLE 8

Destinations of school leavers with two or more 'A' levels (%) (a)

All Subjects

	University	Teacher Training Courses	Other F.E.(b)	Temporary Employment(c)	Permanent Employment(d)
1966	50.2	13.3	15.1	3.9	17.6
1967	49.5	13.0	16.2	3.8	17.4
1968	49.6	13.6	16.2	3.6	17.1
1969	48.7	13.9	17.0	3.6	16.8
1970	47.7	13.1	18.8	2.0	18.4
1971	46.0	12.2	19.6	3.8	18.4
1972	45.2	12.3	18.5	3.6	20.3
1973	43.3	11.3	19.2	3.6	22.6
1974	45.5	9.3	18.1	4.7	22.4

Source for Tables 8-13: Statistics of Education. Vol. 2, 1966-74.

TABLE 9

Destinations of school leavers with two or more 'A' levels (%) (e)

Science Specialists at 'A' level

	University	Teacher Training Courses	Other F.E.	Temporary Employment	Permanent Employment
1966	64.5	4.4	13.2	3.5	14.4
1967	68.9	3.7	12.1	2.5	12.8
1968	70.7	3.7	10.6	3.5	11.4
1969	69.7	3.5	11.9	4.0	10.9
1970	69.6	2.9	13.3	2.4	11.8
1971	66.7	2.6	14.3	3.3	13.1
1972	65.0	2.8	14.2	3.5	14.5
1973	62.7	2.5	13.4	3.1	18.4
1974	63.9	2.3	12.9	5.0	15.9

TABLE 10

Destinations of school leavers with two or more 'A' levels (%)

Arts Specialists at 'A' level

	University	Teacher Training Courses	Other F.E.	Temporary Employment	Permanent Employment
1966	41.1	20.3	16.5	4.2	17.8
1967	38.8	17.4	18.4	5.9	19.5
1968	37.6	20.5	20.1	4.0	17.8
1969	38.0	19.4	20.6	4.0	18.0
1970	36.5	21.2	21.1	2.0	19.3
1971	35.3	19.0	21.8	4.4	19.6
1972	36.9	19.6	20.5	3.9	19.1
1973	34.6	17.7	22.6	4.4	20.7
1974	37.3	14.4	19.5	5.0	23.7

majority of school leavers with science 'A' levels go to the universities. The universities have after all taught science and engineering since the beginning of this century and have the sole responsibility for medical, dental and veterinary degrees. The university proportion of Arts specialists is declining whilst Advanced F.E.'s is increasing.

25. A more crucial distinction can, however, be drawn between the various sectors from Tables 11, 12 and 13 which show the destinations of the better qualified of the school leavers. We have already made the point (para. 20) that the Robbins two 'A' level criterion represents a minimum entry qualification for universities. The evidence of these Tables suggests that universities have continued to attract the better qualified students despite the undoubted advances in public esteem enjoyed by the Advanced F.E. sector. This is supported by the findings of Whitburn et al. in a survey of polytechnic students in 1972-3:

> "of the 4122 full-time degree students in the sample, 67 per cent had in fact applied for a university place ... Seventy per cent of those students in the under-25 age-group in the sample had attempted university entrance, and the figure rises to 80 per cent if we consider only those students who had come straight from school. It therefore seems clear that a polytechnic degree course was very much a second choice for the 18-year-old school leaver."

Forty-four per cent of the same sample gave "'A' level grades not adequate for university" as their reason for choosing the polytechnic they were attending(2). The implications of these figures are discussed in Chapter 10.

TABLE 11

Destinations of school leavers with three or more 'A' levels and high-grade combinations(f) (%)

All Subjects

	University	Teacher Training Courses	Other F.E.	Temporary Employment	Permanent Employment
1966	83.3	3.1	4.7	3.7	5.3
1967	82.4	3.1	5.5	3.6	5.2
1968	82.8	3.0	4.9	4.3	4.8
1969	81.9	3.1	5.6	4.2	5.2
1970	81.1	3.1	5.5	2.8	7.4
1971	79.6	3.4	6.2	3.9	6.8
1972	78.6	3.4	6.6	4.2	7.2
1973	75.5	3.2	7.1	4.8	9.4
1974	76.5	2.8	6.4	5.8	8.6

TABLE 12

Destinations of school leavers with three or more 'A' levels and high-grade combinations (%)

Science specialists at 'A' levels

	University	Teacher Training Courses	Other F.E.	Temporary Employment	Permanent Employment
1966	89.8	0.6	2.6	3.8	3.2
1967	91.4	0.8	2.5	2.4	2.7
1968	90.3	0.6	2.0	4.4	2.7
1969	89.6	0.4	3.1	4.4	2.5
1970	89.5	0.6	1.9	3.3	4.6
1971	88.3	0.7	3.7	3.5	3.9
1972	88.4	0.2	2.8	4.2	4.4
1973	85.9	0.2	3.1	3.5	7.2
1974	83.9	0.8	3.2	6.2	5.9

TABLE 13

Destinations of school leavers with three or more 'A' levels and high-grade combinations (%)

Arts specialists at 'A' level

	University	Teacher Training Courses	Other F.E.	Temporary Employment	Permanent Employment
1966	80.9	5.1	5.1	3.7	5.3
1967	78.1	3.5	6.5	5.5	6.5
1968	77.8	5.2	8.4	4.3	4.3
1969	78.5	3.8	8.3	4.1	5.2
1970	77.4	4.8	8.2	2.1	7.6
1971	76.3	4.5	7.6	3.8	7.8
1972	74.6	4.4	7.8	4.4	8.7
1973	71.8	4.9	9.4	6.3	7.6
1974	75.2	3.1	7.7	5.6	3.5

Notes to Tables 8-13

(a) Excludes leavers from independent schools not recognised as efficient and special schools.

(b) Other F.E. includes degree courses, art and design courses, HND/HNC, GCE 'A' level and other courses at polytechnics and other further education establishments.

(c) Leavers whose intended entry into full-time further education was 13 or more months after the date of leaving school.

(d) Leavers without any known intention to enter higher education including leavers whose destinations are not known.

(e) GCE 'A' levels have been divided into the following groups:

Science: Biology, botany, building construction, chemistry, geology, mathematical subjects, metalwork, physics, technical drawing, woodwork, zoology.

Social science: British constitution, economics, English economic history, general studies, geography, vocational subjects (domestic and commerical).

Arts: Ancient history, art, craft, English literature, history, languages (classical and modern), music, religious knowledge.

Social Science specialists are not included in the table as the number of leavers with 2 or more Social Science 'A' levels from Schools is relatively small.

(f) For leavers with four or more 'A' level passes account has been taken for this purpose only of the best 3 grades. Grades A to E are given scores of 5 to 1 respectively and a total of nine or more defines a higher grade combination - i.e. CCC or its equivalent (e.g. ADD).

26. Tables 11, 12 and 13 also suggest that although this was a period when an increasing proportion of qualified school leavers were taking jobs rather than going into higher education, the labour market was attracting a significantly lower proportion of the better qualified candidates. Moreover the evidence of Gareth Williams' study of the attitudes of sixth formers[4] is that a high proportion of such a group expect to go into higher education at a later stage. If these expectations are realised the numbers are no doubt reflected in the numbers of mature students shown in Tables 3 and 6.

27. From an institutional planning point of view, some of the greatest difficulties arise from fluctuations in demand for different subjects. The competition for places on university courses can be related to two parameters, the ratio of the number of admissions to the number of applicants and the G.C.E. or S.C.E. point scores of the applicants. U.C.C.A. in its statistical supplement for 1974-5[5] comments that application figures do not give an accurate assessment of the effective demand for places unless consideration is given to the 'real field' of applicants. U.C.C.A. defines these applicants as "those desiring to go to a university and at least minimally qualified to do so; no candidate to be counted in the statistics of more than one year". For statistical purposes it is not always easy to establish whether a candidate is 'qualified', because the minimum entry requirements of universities are not uniform and each may interpret borderline qualifications in a different way. Even 'desire to go to a university' is not always satisfactorily documented e.g. if an unsuccessful candidate does not pursue his application to the end of the process through Clearing. U.C.C.A. statistics therefore distinguish between candidates who are certainly in the 'real field', those who are possibly in the real field and those who are excluded from the real field because they are not qualified or have reapplied. From a comparison of the number of candidates admitted as a percentage of those possibly in the real field (which includes those who are certainly in the real field), the following table shows a relatively high percentage of candidates admitted to subjects within a selection of major subject groups:

TABLE 14

The number of candidates admitted to their preferred subject of study in universities as a percentage of those possibly in the real field during 1972 to 1975

	Medicine			Engineering			Sciences			Social Sciences			Languages			Other Arts		
	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total
1972	-	-	82	-	-	92	-	-	93	-	-	79	-	-	88	-	-	88
1973	73	80	75	88	88	88	93	91	92	66	74	69	74	81	78	80	76	78
1974	75	79	76	89	94	90	93	94	93	70	80	74	79	84	83	80	82	81
1975	76	83	79	86	96	86	92	91	92	92	94	93	73	78	75	86	87	87

Source: U.C.C.A., Statistical supplement to the Thirteenth Report 1974-75.

28. The G.C.E. point scores of the accepted home candidates are valuable indicators to the degree of competition for places at higher education institutions offering similar subjects. Table 15 shows the accepted candidates with scores 13 - 15 (better than three B grade 'A' levels) expressed as a percentage of the total number of accepted candidates with G.C.E. qualifications for the period 1972-5.

TABLE 15

The accepted home candidates for university places in major subject groups with scores 13-15 expressed as a percentage of the total number of accepted candidates with G.C.E. qualifications

	Medicine	Engineering	Sciences	Social Sciences	Languages	Other Arts
1972	23.3	17.3	25.9	18.7	31.3	22.7
1973	32.8	19.9	26.3	17.6	28.4	21.1
1974	28.8	18.2	21.9	17.2	27.3	20.6
1975	38.1	19.3	22.4	16.2	28.4	19.6

Source: U.C.C.A., statistical information to C.U.A. Group on Forecasting and University Expansion.

From this Table it can be seen that there has been a large increase in the proportion of accepted candidates with scores of 13 - 15 in the fields of Medicine (which includes Dentistry and other paramedical courses) and a more modest increase in Engineering and Technology, whereas there has been an overall decrease in a number of fields such as Science, Social Sciences, Languages and Arts other than languages.

29. It is not possible to compare the relative competition between subject head groups without a more detailed analysis of the breadth of point scores and the percentage of the total number of accepted candidates in each case. Nevertheless, Table 15 provides a glimmer of light on the relative demand for university subjects within a major subject group during a four year period for those applicants with G.C.E. qualifications. Moreover a comparison of Table 14, which shows what a high proportion of the 'real field' of candidates actually secure university places, with the evidence contained in Tables 8 - 13 and para. 25, gives added force to the qualitative difference between the university and the Advanced F.E. intakes. The evidence provided by Table 15 confirms our own general experience that 1974 was perhaps an easier year for gaining admission to university than immediately previous or later years. This evidence, slender though it is, should be read in conjunction with the high proportion of qualified school leavers shown as entering industry in Table 8 rather than going into higher education.

References

(1) Gareth Williams and Alan Gordon with O.P.C.S., "16 and 18 Year Olds: Attitudes to Education", D.E.S. Reports on Education No. 86, July 1976.

(2) Gareth Williams and Alan Gordon, D.E.S. Reports on Education No. 86

(3) J. Whitburn, M. Mealing, C. Cox, People in Polytechnics, (Guildford: S.R.H.E., 1976), pp. 86-7.

(4) Gareth Williams and Alan Gordon, D.E.S. Reports on Education No. 86.

(5) U.C.C.A., Statistical supplement to the Thirteenth Report 1974-75 (1976).

5. Demographic Factors

30. The most fundamental data upon which any estimate of University student numbers for the period 1980-2000 must be based are the number of births 18 years previously. Table 16 gives births for the years 1949 to 1975(1) and O.P.C.S. mid-1975 based projections for 1976 to 1986(2). (Births are given for England and Wales, Great Britain and the United Kingdom, since the published information may appear on any one of these possible bases.) Also shown is the year of each birth cohort's 18th birthday (since that is the year in which members of each group are most likely to enter a university), and the D.E.S. estimate of the numbers in successive groups of 18 year olds in Great Britain. Births for Great Britain and the estimate of 18 year olds is given in graphical form in Chart 3. Although these figures will have to be used, as the best available, they must be viewed with some caution. Projections of births in the future are clearly hazardous, but some account of the current projections must be given if the period under consideration is to be extended to cover those 18 year olds who will enter universities up to the year 2000.

31. The mid-1975 based projection of births suggests a fall in 1977 to 641,000, which lies roughly half way between the mid-1974 based(3) central projection and its low variant. The mid-1975 projection coincides approximately with the mid-1974 low variant for the years 1982 to 1992; in the light of increased acceptance of contraceptive techniques an even lower projection than this may well be correct. The birth projections given in Table 16 are those from the mid-1975 based (central) projection. The figures for 18 year olds do not match these, however, since the D.E.S. projection is based on the mid-1974 O.P.C.S. projection, adjusted to January to give calendar year births.

32. The figures of past births are, of course, not subject to revision but they do not necessarily represent the true size of each cohort at any particular time, as they must be adjusted for such factors as death and migration. This adjustment is done in the D.E.S. estimate, but it must be borne in mind that such estimates have in the past shown limitations. They are amended in particular to take account of census information, but towards the end of a census period they become increasingly less accurate. The inaccuracies surface in the D.E.S. published statistics, in particular in the tables relating to the proportion of each age group in school(4), where percentages over 100 have been noted(5). (The estimates of population originate with the Government Actuary rather than the D.E.S.)

33. It can be seen from Table 16 that the number of 18 year olds, which has been rising since 1973, will continue to rise until 1982, reaching a peak of 927,000, which is 12.9% higher than the population of 821,000 upon which the 1976 university entry was based. The number of 18 year olds then falls steadily from 1982 to at least 1995, when the projection suggests about 630,000. It is worth noting that in this long fall from 1982, the 1976 figure will be reached again in 1989; but between 1989 and 1995 there will be a further fall of 24% before the projected increase begins. In the whole period 1982-95 we will see a fall in the number of 18 year olds by some 32%.

34. The births which give rise to the 18 year olds of 1995 will occur in 1977, and the prediction is therefore on fairly firm ground. Less certain, however, is the increase in numbers suggested by O.P.C.S. for births after 1977. Some recovery is very likely to take place because of the increasing number of women of child bearing age, but the scale of the recovery will depend on the fertility rate. Whether the numbers of 18 year olds in the five years either side of the year 2000 will be rising or falling is still an open question.

TABLE 16

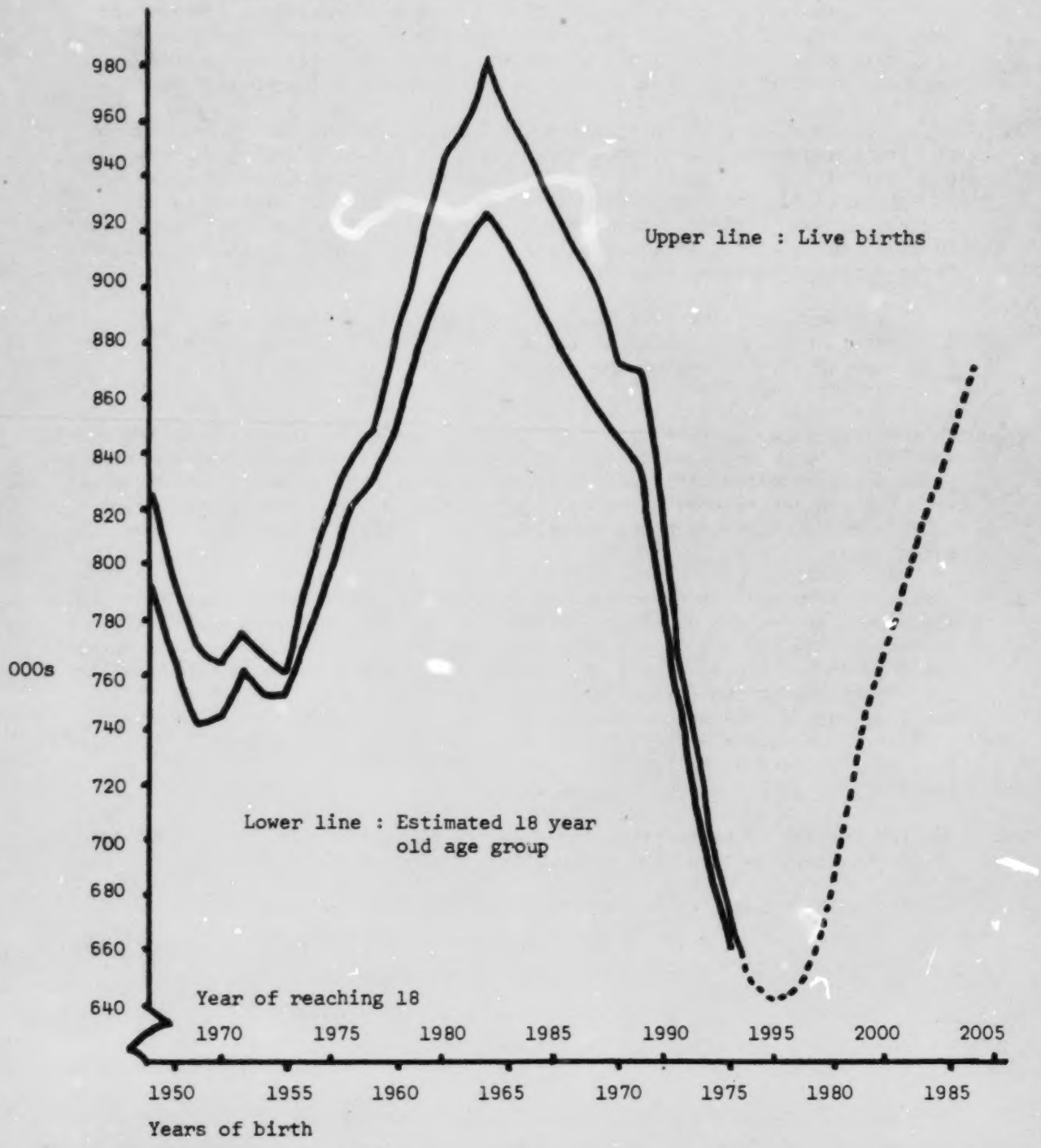
Births 1949-1986; year in which each cohort reaches the age of 18 and estimated 18 year old age group

Year of birth	Number of live births (000's)			Year of 18th birthday	Est 18 yr. old age group (GB) 000's
	England & Wales	Great Britain	United Kingdom		
1949	730	826	855	1967	790
1950	697	790	818	1968	763
1951	677	768	797	1969	741
1952	673	764	793	1970	744
1953	684	775	804	1971	760
1954	673	766	795	1972	752
1955	667	760	789	1973	752
1956	700	796	825	1974	776
1957	723	821	851	1975	800
1958	740	840	871	1976	821
1959	748	848	879	1977	830
1960	785	886	918	1978	852
1961	811	912	944	1979	880
1962	838	943	976	1980	900
1963	854	957	990	1981	915
1964	876	980	1015	1982	927
1965	862	963	997	1983	915
1966	849	946	980	1984	900
1967	832	928	962	1985	884
1968	819	914	947	1986	870
1969	797	888	920	1987	855
1970	784	872	904	1988	845
1971	783	870	902	1989	836
1972	725	804	834	1990	779
1973	676	750	779	1991	730
1974	637	710	737	1992	694
1975	602	670	696	1993	661
1976	584	649	675	1994	
1977	576	641	667	1995	
1978	579	645	671	1996	
1979	596	663	690	1997	
1980	629	699	726	1998	
1981	667	741	768	1999	
1986	784	870	899	2004	

Sources: OPCS Monitor PP2 76/1 August 1976 (for 1975-81).
Annual Abstract of Statistics (Central Statistical Office, from OPCS and Registrar General (Scotland)) (for 1949-1974).

CHART 3

Live births 1949-86 and consequent estimated 18 year old population 1967-93 (Great Britain)



Sources: 18 Year Olds: D.E.S., 1976, (O.P.C.S. estimates for mid year, adjusted to January for the D.E.S.)
Births: Annual Abstract of Statistics (Central Statistical Office, from O.P.C.S. and Registrar General (Scotland)).

The uncertainty results in particular from the difficulty of predicting the period fertility rate (the average number of live born children which would result if women experienced the prevailing annual fertility rates as they passed through their reproductive period); the mid-1975 based projection assumes that the period fertility rate will remain at its present very low level of 1.7 until about 1979 and thereafter reach the assumed long-term rate of 2.1 by 1985. There are, however, quite strong social arguments that it will remain at a low level for much longer than this.

35. It is considerations of this kind which have led to inaccurate projections of births and hence school populations in past D.E.S. planning documents, e.g. the 1972 White Paper(6), which suggested that the number of children in school would continue to rise after 1975, reaching 10 million by 1987; the current projection(7) looks forward to a peak at about 9 million children in 1976, and a steady fall thereafter to between 7 and 7.5 million in 1988. Peter Armitage comments that

> "at almost any time over the past 50 years, an assumption of a constant 850,000 future births a year for the U.K. would have been as good or better than any of the projections made at various times."(8)

This may be an exaggeration, but it draws attention to the difficulties which the D.E.S. planners have to face in trying to make decisions on, for example, primary school entry at only four years' notice. The universities are at an advantage in having some 17 years in which to plan, and one of the purposes of this Report is to help to ensure that we use those years to the best advantage.

36. A factor which must be taken into account in any estimates of numbers entering higher education, and which so far does not seem to have been taken into account by the D.E.S., is the fact that half of all 'home' university entrants are from Social Classes I and II. Births are not evenly and proportionally distributed among the various social groups that make up the population; it has long been a commonplace obervation that manual workers tend to marry earlier and have their families earlier than do the professionally qualified. This has now been quantified(9). The first information on "differential fertility by social class" was published by O.P.C.S. in 1974(10).

37. For the purpose of statistical analysis the population (or, more accurately, the economically active) are grouped in a number of different ways:

(a) by Social Class:
- I - Professional etc. occupations
- II - Intermediate occupations (mostly managerial)
- IIIN - Skilled occupations - non-manual
- IIIM - Skilled occupations - manual
- IV - Partly skilled occupations
- V - Unskilled occupations

(b) by 27 Occupation Group Orders; broadly speaking, Occupation Group Orders I - XX correspond to Social Classes IIIM, IV and V, although managers in these orders (comprising, of course, only a small percentage of the total) will come into Class II. Orders XXI - XXIII and XXVI correspond largely to Class IIIN, while Orders XXIV and XXV correspond generally to Social Classes I and II.

(c) by Socio-Economic groups.

38. During the period 1970 to 1975, the number of live births in England and Wales (in thousands) fell from 784.5 to 603.4, a drop of 23.1%. However, this fall was not evenly distributed through the social classes. The breakdown of births by social class is summarised in Table 17. Social Classes I and II experienced a fall in births over the six years in question of only 4%, and the fall did not begin until 1972. By contrast births in Classes IV and V fell by one third. This rapid fall is clearly linked (temporarily at least) with the increased use of more reliable contraceptive methods, particularly the pill, but the motivational issues involved are very complex; a number of studies of this have been made(11). While the techniques of family planning have been well known to and used by parents in Social Classes I and II for some decades, it is only in the last decade that the family planning campaign has had a marked effect on Classes IV and V; Classes I and II were already achieving the size of family they wanted, but Classes IV and V have been doing so only recently. It seems reasonable to expect that when IV and V reach a family size which they regard as satisfactory, the fall in birth rate may stop.

TABLE 17

Live births by social class of father

1970 - 1975 (England and Wales) *

Year	Social Class I & II	IIIN	IIIM	IV & V	Total Legit. live births	Total live births incl. illegit.
1970	148	76	301	168	720	784.5
1971	155	75	298	160	717	783.2
1972	152	71	272	141	663	725.4
1973	148	65	246	131	618	676.0
1974	146	60	232	120	583	639.9
1975	142	57	214	112	549	603.4

Source: From Pearce and Britton, 1977, Tables 1 and 2 (9).

* The births for each class do not add up to the total since unclassifiable births have been excluded. The information is based on a sample of one in thirty live births for 1970, 1971 and 1972; one in four for 1973 and 1974; and one in ten for 1975.

39. A problem over the figures given in Table 17 is that they have no denominators; that is to say, we have no way of knowing the number of potential mothers in each year in each social class, and we cannot therefore calculate birth rates. There is no way of telling, for example, whether the almost static number of births in Classes I and II reflects an increasing number of potential mothers tending to have fewer children each, or a declining number of potential mothers tending to have more children each. Could the fall in births in Classes IV and V reflect a fall in numbers of potential mothers in these Classes? Without this information it is hazardous to attempt any extrapolation to the years on either side of the period covered.

40. Information is not available for years prior to 1971, although some idea of the social class distribution of children of various ages may be obtained from the information given in the 1971 census, but this survey at a single point in time cannot replace an annual collection of data.

41. Table 18 reproduces the information made available by U.C.C.A. on the occupation groups of parents of university candidates. This shows a situation of considerable stability: the proportion from Occupation Group Orders I - XX and from XXI - XXIII and XXVI has tended to fall, but this is almost exactly matched by the fall in the proportion of potential fathers in these orders revealed by the census figures.(12)

TABLE 18

Parental occupation of

home applicants for entry to university

1970-5 (%)

Occupation group order	Approx. social class	Percentage of total applicants						Percentage of accepted candidates						Census 1971, Males 45-59
		'70	'71	'72	'73	'74	'75	'70	'71	'72	'73	'74	'75	
I-XX	IIIM, IV & V	29	29	29	28	28	26	28	29	27	26	26	25	62
XXI-XXIII, XXVI	IIIN	27	28	26	26	25	25	28	27	27	25	25	24	21
XXIV (Administrators & Managers)	II	15	14	14	14	15	15	14	14	14	15	15	16	7
XXV (Professional)	I	29	29	31	32	32	33	30	30	32	34	34	35	9
Total of XXIV & XXV	I & II	44	43	45	46	47	48	44	44	46	49	49	51	16

Source: U.C.C.A., Statistical Supplement to the Twelfth Report, Table K4 with the figures for 1975 added (based on a sample for 1970-72, and the whole population for 1973-75).

42. Some 51% of home university entrants in 1975 had parents in occupation group orders XXIV and XXV, despite the fact that these orders contribute only 16% of the males aged 45-59 in the population. Any variations from the national norm in the pattern of births of Social Classes I and II will clearly have important implications for the numbers entering universities, if the future distribution of applicants and entrants remains as it has in the recent past.

43. The evidence provided by Table 18 corresponds closely with the report of Gareth Williams' attitude survey of 16 and 18 year olds(13) which found that:

> "The higher the socio-economic status of the father's occupation the more likely it is that a fifth former will stay on at school after the end of compulsory education. Similarly fifth formers whose parents had themselves continued at school beyond the minimum school

leaving age were more likely to intend to stay on themselves. There are interactions between these family background factors and the academic orientation measure, which itself is closely related to intention, thus making it hard to distinguish the effects of 'social class' and 'academic ability'. However, the social class effects described can also be observed within each academic orientation group."

44. The survey included a sampling exercise, the results of which were summarised in the following table:

TABLE 19

Socio-economic status of occupations of fathers of 16 and 18 year olds(%)

	16 year olds	18 year olds in school and further education
Professional and managerial	5	20
Intermediate	18	40
Skilled non-manual	10	12
Skilled manual	39	18
Unskilled and semi-skilled manual	19	8
Other and don't know	9	2
Total	100	100
Total numbers	806	1,986

Source: D.E.S. Reports on Education No. 86.

References

(1) Annual Abstract of Statistics (Central Statistical Office, from O.P.C.S. and Registrar General (Scotland)).

(2) O.P.C.S. Monitor PP2 76/1, August 1976.

(3) Variant Population Projections 1974-2011, O.P.C.S. PP2 No. 6.

(4) e.g. Education Statistics for the U.K., 1973, Table 3.

(5) Discussed in Armitage, p.5.

(6) Education: A Framework for Expansion, Cmnd. 5174, 1972.

(7) D.E.S. Reports on Education No. 85,"The Future School Population", June 1976.

(8) Armitage, p.3.

(9) David Pearce and Malcolm Britton, "Some socio-economic aspects of the decline in births", Population Trends 7, O.P.C.S., March 1977. (We are indebted to the authors for allowing us to see a pre-publication copy of this.) The topic is also discussed by Ernest Rudd in an article in the Times Higher Educational Supplement for 19 November 1976 entitled "What a falling birth rate will mean to universities in 1982".

(10) Registrar General's Quarterly Returns for England and Wales, 2nd Quarter of 1974, No. 502, Appendix H, (H.M.S.O.).

(11) e.g. Myra Woolf (Ed.), Family Intentions, H.M.S.O., 1971.

(12) U.C.C.A., Statistical Supplement to the Twelfth Report 1974-5 (1976), p.6, para. 13. See also Censuses 1966 and 1971, Economic Activity Tables, Table 29; the number of males aged 45-59 in Classes I and II increased between the two censuses from 22.7% of the total in this age group to 26.2%.

(13) Gareth Williams and Alan Gordon, D.E.S. Reports on Education No. 86.

6. Official projections of student numbers since 1963

45. Public policy on the provision of full-time higher education is still guided by the 'Robbins principle' and successive Governments have declared their allegiance to it. The Robbins Committee stated:

> "Throughout our Report we have assumed as an axiom that courses of higher education should be available for all those who are qualified by ability and attainment to pursue them and who wish to do so"(1).

The Robbins method of estimating the number of places required in the future to give effect to the principle was:

(a) look at the size of the age groups relevant to higher education

(b) estimate what proportions of these age groups are likely to reach the level of attainment appropriate for entry

(c) make assumptions on how many of those so qualified will enter; how many will try to enter higher education (the application rate); and what proportion of applicants with given attainments should be given places (the degree of competition)

(d) decide on assumptions about the future length of study.

46. With regard to (b), Robbins used the 'one-stage' method of extrapolating the proportion of the age group obtaining school leaving qualifications, rather than the 'two-stage' method of projecting the proportions staying on at school after the minimum leaving age and then the proportions of those who obtained the qualifications. As regards (c), Robbins had inadequate information on applications and resorted to the result of the interaction of the two variables, namely the proportions of all school leavers with given qualifications who had entered higher education, and postulated increases over time in those proportions. It was stated that "our estimates do not allow for any relaxation in the degree of competition", though of course the degree of competition could not be specified as the application rate was not known. But seeing no easy way to estimate how the application rate would change in future, Robbins noted that it might be affected by a sense of frustration if adequate places were not provided, a fall in the relative rewards for the skills resulting from higher education, or by a system of student finance less generous than the present (1963) system: "this last point is of critical significance". With reference to (d), it should be noted that Robbins saw postgraduate study as a variable affecting the length of a student's overall career in higher education: postgraduate numbers were related to a rising proportion of first degree graduates proceeding to further study. Finally the 'axiom' applied only to home students, and places for overseas students were additional to whatever resulted from the calculations above(2).

47. We were interested to see whether the Robbins principle had been upheld. The answer does not of course lie in a simple comparison between the Robbins Report's projections and the actual numbers in the years since 1963 (see Table 20 for 1971-6), because the excess of actual over projections may be (and indeed largely was) due to the fact that the proportions of the age group who reached the level of attainment appropriate for entry exceeded the Robbins estimates. The simplest measure, in terms of the 'model' in paragraph 45, would be whether the degree of competition had changed, but that has never been measured for higher education as a whole (though U.C.C.A.'s calculations of candidates admitted as a percentage of those in the real field in essence provide the

information for universities - Table 14). Since Robbins placed so much reliance on the projection of the percentage of qualified school leavers entering higher education, the actual figures for recent years should be compared. The published statistics are not adequate to allow a precise comparison, but for recent years they show clearly that in this respect the Robbins predictions have not been met. Indeed participation rates measured in this way are now lower than in 1961 (the Robbins Committee's baseline)(3). Among students with less than two 'A' levels the decline from 1973 onwards is mainly due to the reduction of the teacher training intake well below the level assumed by the Robbins Committee.

48. Is this evidence that the Robbins principle has not in recent years been upheld? Any answer to that would have to take into account further limitations in the statistics. The U.C.C.A. statistics of candidates' ages (particularly Table 5) suggest that deferment by over one year is becoming more common and that a growing proportion of 'A' level passes by students of school age are achieved at F.E. colleges where we have no information about the destination of their leavers. Furthermore, some of the influences on the application rate which the Robbins Committee assumed would be constant in their effect or would operate to increase the rate may have in fact operated in the opposite direction (some of them by virtue of Government manipulation). Thus the system of student finance has become 'less generous', in that the real value of the student grant rose from 1961 to 1965 but fell substantially between 1965 and 1970 with only a partial recovery in 1971, and in that relative to other incomes the grant has definitely fallen behind(4). The large increases in tuition fees for 1977-8 are partly (in Robbins terms) an attempt to reduce the average length of course by reducing the number of postgraduates. And the relative rewards for the skills resulting from higher education may (at least as perceived by potential applicants) have fallen, with rising graduate unemployment and, in relation to the traditional expectations of graduates, under employment.

49. Given the deficiences of the data, we must rely on intuition, which suggests that in recent years the degree of competition has overall not become more severe so far as applicants with two 'A' level passes are concerned. Admission to science and technology courses is still relatively easy and to medicine has become tighter. In arts and social studies, any tightening in the universities has probably been offset by expansion in polytechnics, and, more recently, by 'diversification' of teacher training places. But the effect of the latter is to reduce the opportunity for admission of applicants with less than two 'A' level passes.

50. On the publication of the Robbins Report, the Government accepted the projections of the number of full-time student places to be provided up to 1973-4. They were presumably up-dated by the D.E.S. as time passed and as some of the original assumptions were proved wrong. Indeed revised projections were presumably the basis for the expansion of higher education provision in excess of that recommended in 1963. But no revised figures were published in a coherent form. The corner of the curtain was lifted in 1970 to reveal D.E.S. thinking in Education Planning Paper No. 2, Student Numbers in Higher Education in England and Wales. The projection of 835,000 full-time students in 1981-2, was not a statement of Government policy, and we need consider only the variations on the Robbins Committee's methods. The Paper rejected the application ratio and the degree of competition as useful concepts, and employed the two-stage method of projecting the numbers of qualified school-leavers. It then projected forward (as did Robbins) the proportions of qualified leavers entering higher education. However, in converting initial entrants to total places, it implied that the proportion of

postgraduates would not be the result of 'free demand' (now relabelled 'private demand') by graduands but would be independently determined. This implication was substantiated by the 1972 White Paper, Education: A Framework for Expansion (paras. 117, 118) which suggested that postgraduate numbers should be more related to manpower requirements.

51. The main significance of the 1972 White Paper is that the Government published a planned target for higher education places, divided by sector. The target of 750,000 for 1981-2, as is known only too well, has been reduced in three steps to 560,000 (Table 20). In brief the reasons advanced have been that staying-on rates at school and the proportion of qualified leavers entering higher education have been below expectation; that teacher training places are to be cut back because of the projected decline in school population; and that the 1977 increases in tuition fees will reduce the proportions of overseas and of postgraduate students.

TABLE 20

Planned and actual numbers of full-time students in higher education, 1971-2 to 1981-2. Great Britain; (000s)

(A) Planned Numbers

Month & year of 'plan'	10/'63	12/'72	11/'74	2/'76	2/'77
1971-2	356				
1972-3	372				
1973-4	392				
1974-5	412				
1975-6	433				
1976-7	453			516	515
1977-8	475			523	519
1978-9	499			533	519
1979-8	528			550	522
1980-1	558				541
1981-2	596	750	640	600	560

(B) Actual Numbers

	Universities	Advanced F.E.	Coll. of Ed.	Total
1971-2	235	103	123	462
1972-3	239	107	125	472
1973-4	244	112	124	480
1974-5	251	120	116	487
1975-6	263	247		
1976-7	273			520

Sources: (A) Planned:

10/63 Robbins Report, table 30.
12/72 D.E.S., Education: A Framework for Expansion, Cmnd. 5174, p. 36.
11/74 D.E.S., press notice, 25 November 1974.
2/76 Public Expenditure, Cmnd. 6393.
2/77 The Government's Expenditure Plans, Cmnd. 6721-II, p. 72.

(B) Actual: Statistics of Education, except:

1975-6: House of Commons, Official Record, 15 December 1975, cols. 499-500.
1976-7: House of Commons, Official Record, 18 January, 1977, cols. 83-84. D.E.S. press notice, 18 January, 1977 (Estimate only).

52. Since 1970 there have been changes in the D.E.S. method of projecting student numbers. The same factors are employed, but two ratios are given a new prominence: the ratio of home entrants under 21 years old to qualified leavers with two or more 'A' levels (Robbins and the 1970 Planning Paper separated leavers with two and three or more passes); and the ratio of home entrants under 21 years old to the 18 year old age group. Ministers' speeches (and the 1972 White Paper) suggest that the age participation rate is the more influential, and there is a danger that it is gaining a life of its own: even if it increases, it does not follow that the Robbins principle is necessarily being fulfilled.

53. Table 20 sets out the planned and actual numbers in higher education. The discrepancies are alarming and we quote them not in criticism of Robbins or of the D.E.S. but to illustrate the fallibility of the present state of knowledge and the inadequacy of the present machinery. They must also serve as a warning to groups like ourselves who seek to offer even tentative projections for the future based on such uncertain evidence as now exists. We are fully conscious of the difficulties of predicting future higher education numbers but the evidence of this Table illustrates only too graphically the difficulties which higher education institutions and their advisers and decision-makers have in undertaking any realistic institutional forward planning when the Government itself finds such difficulty in fixing targets and holding to them. We return to this in Chapter 11 where we make what we hope is a constructive proposal.

References

(1) Robbins Report, para. 31.

(2) Robbins Report, paras. 149-178; Appendix 1, Annex e.

(3) D.E.S., Statistics of Education, 1971-74, vol. 2, Table 13, which does not differentiate between advanced and non-advanced F.E. in the residual category of 'other and unknown F.E. courses'. Robbins Report, table 27A and para. 164.

(4) The most recent summary is P. G. Saunders & E. Levin, "The Financing of the Student Maintenance Grant and the Parental Contribution System 1959-1974", Higher Education Bulletin, 4, No. 1, Winter 1975, pp. 5-22.

7. Some comments on the methods of forecasting numbers in higher education currently employed by the D.E.S.

54. We have been fortunate in obtaining a summary of an address to the Annual C.U.A. Conference held in April 1976 given by Mrs. C. M. Firth of the D.E.S. Statistical Branch which describes very clearly the methods used by the D.E.S. in forecasting numbers in higher education. We are grateful to Mrs. Firth for permission to quote from her address. It will be noted that throughout Mrs. Firth referred to a figure of 600,000 students in higher education in 1981-2 but this figure has since been revised to 560,000.

"Current planning of higher education tends to be dominated by resource constraints but the D.E.S. still needs to monitor and project 'free demand', that is demand assuming current policies on entry qualifications, student grants, etc.

(a) Past growth and projections for 1981-2

Total numbers in higher education increased fourfold from 125,000 in 1955 to 500,000 in 1975, but the rates of growth varied and projections made during this period tended to be much influenced by the growth rates evident at the time. The prediction of 590,000 full-time and sandwich students in Great Britain for the year 1981-2, implied in the Robbins Report, was remarkably close to the total of 600,000, which is the Government's current planning target(1), but the path to this has been very different from that anticipated. The highest total projected more recently, 835,000 students (1970)(2) was based on illustrative assumptions, influenced by the very high rates of growth in the mid 60s, while 750,000 was the first official planning target publicly announced in 1972(3). The target has since been reduced to 640,000 and then 600,000 in the Public Expenditure White Papers of 1975 and 1976. Neither target was inconsistent with the 'free demand' projections at the time.

(b) Methods of projecting

The following indicates the aggregates which are used in projecting demand for higher education:

Population (relevant age group)

Number staying on after school age

Number achieving 'A' levels at school or at F.E. colleges = Qualified leavers

Young entrants (home))
Mature entrants (home)) = Total initial entrants
Overseas entrants)

Effective length of stay converts entrants to total numbers

Postgraduates: allowed for by inclusion in length of stay or as proportion of undergraduates or as a separate flow model (home/overseas)

(c) Possible relationships for projections

$$\text{Willingness Rate} = \frac{\text{Home entrants under 21 years old}}{\text{Qualified leavers with two or more 'A' levels (or three or more 'H' levels)}}$$

$$\text{Age Participation Rate} = \frac{\text{Home entrants under 21 years old}}{\text{Single relevant age group (18 year old)}}$$

The method normally used is to project separately the three main streams entering higher education for the first time, and then to convert them to a total number of students by taking into account the effective length of stay for each main sector, university, non-university and teacher training. For mature and overseas entrants projections have to be based mainly on past trends, with allowance for any known factors, e.g. rise in fees. For home entrants under 21 (about 70% of all entrants) the series can be related to various demographic and school series which have been separately projected, but the two most commonly used have been population aged 18 and qualified leavers from school and further education with two or more 'A' levels (and the Scottish equivalent) giving the 'age participation rate' and 'willingness rate' shown above.

Postgraduates may be allowed for in several ways, as indicated, but with the current very different growth rates for home and overseas students the third method is preferable (a separate entrant/total students model).

The advantage of projecting on the basis of the age participation rate is that the numbers in the 18 year old age group are known fairly accurately for a long period ahead, and certainly for longer term projections this is the most useful baseline. The willingness rate allows for the extent to which higher proportions of a given age group are qualifying for higher education but recently qualified leavers projections have had to be progressively reduced. The growth in numbers staying on after school leaving age has been much slower than anticipated after 1970.

(d) Recent trends and projections to 1981

The willingness rate fell appreciably during the early 1970s, but whereas the university rate recovered in the last two years that for the non-university sector is now very much affected by the cut-back in teacher training entrants, which will continue for the next few years, although it is assumed that by 1981 the provision of new courses and continued expansion of C.N.A.A. and vocational courses could compensate. The numbers of mature entrants will also be affected by reduced opportunities in teacher training, but some continued increase in demand has been assumed for them and for overseas entrants, both postgraduate and others. The latest current projections of free demand give a range of possible student numbers in 1981 centring on a figure a little above 600,000, but with a range on quite plausible assumptions at least 5% either side.

(e) Long term projections

The numbers in the 18 year old group are available up to 1993-4, and projections of young entrants to higher education can be made simply by applying various age participation assumptions to these figures. A salient feature of the post Robbins period has been that the age participation rate rose from 7% to 14% in the decade to 1971-2, since when it has flattened off and even

fallen even though places have been available for most types of course. For illustrative purposes, it has been assumed that by 1981 the rate could recover modestly to 15%, and that it might rest at that figure or expand up to 20% during the following decade. The demographic pattern is all important, however, and shows a slow decline in the age group from 1982-3 to the end of that decade followed by a rapid fall in the early 1990s. It would be realistic on present knowledge to suppose that home entrants to higher education will not increase much after the early 1980s and, on current policies, could decline in the 1990s. History records, however, that the growth in participation in the second half of the 1960s was sufficient to offset a rather similar demographic decline."

55. We think that the D.E.S. flow model approach, which takes young entrants (home), mature entrants (home) and overseas entrants as its starting point is satisfactory provided the assumptions made in the model are correct and provided the total initial entrants and the mix for each year are known with reasonable certainty. But this kind of model can only be used for very short term planning, since errors can quickly multiply.

56. The D.E.S. main predictive ratio for the school leaver entry over the short term is the willingness rate. We have calculated a willingness rate for universities only.

TABLE 21

Willingness Rate for universities only

Year of entry	Qualified leavers (000s)	Home entrants to universities, aged 20 or under (000s)	Willingness Rate (%)
1966	85.3	44.3	50.4
1967	89.8	46.8	52.1
1968	94.5	47.4	50.2
1969	97.6	49.5	50.7
1970	102.2	50.5	49.4
1971	107.9	51.0	47.3
1972	109.8	51.5	46.9
1973	111.4	51.9	46.6
1974	113.8	54.2	47.6
1975	117.4		

57. A correct projection of the number of entrants would seem to be crucial, and it is in this area that the D.E.S. methodology seems open to comment. O.P.C.S. has recently published its projections of births in the form of a central projection with high and low variants above and below this. It seems to us that the D.E.S. could well follow this example in its projections of student numbers and publish the assumptions upon which each variant is based.

58. However, the willingness rate and the age participation rate have a cardinal weakness; both use as their numerator the number of home entrants under 21 years old. If, for example, the number of places in higher education between now and 1982 were to be maintained at its present level with no expansion to match the increase in 18 year olds, the numerator in both ratios would remain constant, while the denominator, certainly in the case of the relevant age group and probably in the case of the qualified leavers, would rise. The willingness rate would then fall steadily, but would in no sense measure the 'willingness' of the age group to enter higher education, but rather the 'opportunity' to do so: in such circumstances 'opportunity rate' would be a better description. It can also be argued that the willingness rate and the age participation rate take no account of the proportion of university entrants coming from age groups other than the 18 year olds, and an alternative numerator for these ratios might be the number of applicants under the age of 21. Of course, this information is available only for universities and not for the greater part of the Advanced F.E. sector.

59. The result of taking home applicants under 21 as the numerator in a willingness ratio is shown in Table 22.

TABLE 22

"Willingness Rate" and "Age Participation Rate" for universities based on home applicants aged 20 or under

Year	18 year olds (000s)	Qualified leavers (GB) (000s)	Home applicants aged 20 or under (000s)	Willingness Rate (%)	Age participation Rate (%)
1969	741	97.6	94.8	97.1	12.8
1970	744	102.2	95.8	93.7	12.9
1971	760	107.9	101.9	94.4	13.4
1972	752	109.8	101.5	92.4	13.5
1973	752	111.4	100.0	89.8	13.3
1974	776	113.8	99.2	87.2	12.8
1975	800	117.4	101.2	86.2	12.7

Source: Successive Statistical Supplements to U.C.C.A. reports, Table B1 (samples for 1969-72, whole population for 1973-75).

This new willingness rate shows a slightly different pattern from that using entrants, and the movement of the age participation rate is markedly different.

60. From the universities' point of view the willingness rate used by the D.E.S. (and in our own Table 22 above) also suffers from the fact that the threshold of two 'A' level passes used to divide the qualified from the unqualified is too low: those with only two low grade 'A' level passes have only limited prospects of obtaining a university place (except in a very small range of subjects), although they may well gain admission in the Advanced F.E. sector:

A ratio involving candidates with rather higher qualifications for university entry, e.g. three grade 'C's (9 points), or better, which offer substantially better prospects of admission than the minimum qualifications, would be a more helpful indicator of the 'popularity' of the universities, since this group truly have a choice between entering a university or not doing so.

61. We have described in Chapter 5 the considerable fall in the annual number of births over the years 1970 to 1975. It is regrettable, in view of the steady fall in births in Great Britain from 980,000 in 1964 through 872,000 in 1970 and 670,000 in 1975 to a projected 641,000 in 1977, that no break down of births by social class is available for the years before 1970, since such figures could have an important bearing on student numbers in the years 1982 to 1988, the crucial period of medium term planning.

62. The data in Table 17 give a breakdown of the births for the years 1970 to 1975 by social class of father. In view of the high proportion of university entrants drawn from Social Classes I and II, the variation between classes is especially significant. The 1971 census[4] yields the following percentage breakdown by social class of parent for 10-14 year olds:

Social Class I:	5.5%)	
II:	20.0%)	25.5%
IIIN:	9.9%	
IIIM:	40.1%)	
IV:	17.6%)	64.7%
V:	7.0%)	

We assume this distribution to be evenly spread through the age range (this may be a rash assumption but the distribution for 9 year olds is very similar). We also disregard social mobility, which would tend especially to increase the numbers of parents in Social Class II as they were promoted to managerial positions. From this we can calculate an approximate breakdown by social class of the 18 year old cohorts in the mid to late 1970s, bearing in mind that social mobility will tend to make a calculated figure for Classes I and II an underestimate.

TABLE 23

Age participation rate by social class for 1974

Social Class	% of UCCA sample	Grossed up total home entrants aged 20 or under (000s)	All 18 year olds (000s)	Age participation rate (%)
I & II (occ. group orders xxiv & xxv)	49	26.6	198	13.4
IIIN (occ. group orders xxi-xxiii & xxvi)	25	13.6	77	17.7
IIIM; IV and V (occ. group orders I-XX)	26	14.1	502	2.8
Total	100	54.2	776	7.0

TABLE 24

Projection of student entrants to universities using social class data

Year of birth	Year of 18th birth-day	Total Est. 18 yr olds (000s)	Social Class									Total home entrants aged 20 or under (000s)	Age Participation Rate (%)
			I & II			IIIN			IIIM, IV & V				
			% of age group at birth	Est. 18 yr olds (000s)	Entrants at APR of 13.4% (000s)	% of age group at birth	Est. 18 yr olds (000s)	Entrants at APR of 17.7% (000s)	% of age group at birth	Est. 18 yr olds (000s)	Entrants at APR of 2.8% (000s)		
1970	1988	845	21.4	181	24	11.0	93	16	67.6	571	16	56	6.6
1971	1989	836	22.5	188	25	10.9	91	16	66.6	557	16	57	6.8
1972	1990	779	23.9	186	25	11.2	87	15	64.9	506	14	54	6.9
1973	1991	730	25.1	183	25	11.0	80	14	63.8	466	13	52	7.1
1974	1992	694	26.1	181	24	10.7	74	13	63.1	438	12	49	7.0
1975	1993	661	27.0	173	24	10.9	72	13	62.1	410	11	48	7.3

63. Table 18 gives a breakdown of accepted home candidates through U.C.C.A. by parental occupation group; the 1974 sample can be grossed up to give approximations of the total numbers of applicants in each social class, and hence an age participation rate by social class.

64. Combining the information given in Table 17 and Table 24, a projection for home entrants aged 20 or under can be made, assuming that the age participation rates for each social class remain constant at the level of 1974. On the assumptions described in paragraph 62, Table 24 indicates that the number of entrants falls by only 14%. Also this calculation shows that although we assume a steady age participation rate for each social class, the overall age participation rate varies considerably as the social mix changes. The age participation rate varies almost as much as it did over the years 1968 to 1974 upon which D.E.S. forecasts must largely be based.

65. In Table 25 we use various age participation rates to calculate the home university entrants aged 20 or under for 1988-93.

TABLE 25

Projection of home university entrants for 1988-93, at various overall age participation rates

Year	Total 18 year olds	Home entrants aged 20 or under at Age Participation Rates of		
		7.0% (000s)	7.5% (000s)	9.3% (000s)
1988	845	59.2	63.3	78.6
1989	836	58.5	62.7	77.7
1990	779	54.5	58.4	72.5
1991	730	51.1	54.8	67.9
1992	694	48.6	52.1	64.5
1993	661	46.3	49.6	61.5

The age participation rate of 9.3% in the third column is equivalent to an assumption that the overall age participation rate for all higher education will climb to 20%. As might be expected the totals using the age participation rate of 7% bear some relationship to the results found in Table 24. In Table 25 the entries move with the 18 year old population, but the damping effect of using the social class differentials is considerable, and some way will need to be found to incorporate this into the predictions based on an increasing age participation rate.

66. It is clear to us that a good deal of work could and should be undertaken to refine the information available about social class and rates of birth if only to make Government forward planning, and not just in Education, more realistic. The social class factor has not so far been incorporated into D.E.S. forecasting methodology and we hope that the discussion and calculations set out in this Chapter indicate that this would be desirable even though it introduces yet another uncertainty into the calculations.

References

(1) Public Expenditure, Cmnd. 6393. This figure has now been superseded as illustrated in Table 20.

(2) Education Planning Paper No. 2.

(3) Education: A Framework for Expansion, Cmnd. 5174, 1972.

(4) Census 1971: Household Composition Tables, England and Wales, Table 46.

E. External factors which might affect the development of universities and higher education in general

67. "Past evidence", states Ernest Rudd[1], "gives no reason to believe that there is any close relationship between birth trends and applications to university". He justifies this by quoting two periods when the trend and the application rate were considerably at variance:

(a) between 1965 and 1969, when the 18 year old age group fell by 23%, applications through U.C.C.A. rose by 47%

(b) between 1969 and 1974, when the age group was relatively stable, falling by less than 1%, applications rose by only 4%.

Gareth Williams[2] quotes J. R. N. Stone's analogy between the growth of higher education and an epidemic where at first the disease spreads slowly but then becomes more rapid as more victims contaminate yet more victims until it becomes harder and harder to find uninfected people or people who have not developed some immunity, so that the rate of growth tapers off. Many people looking at Table 8, above, might conclude that the trend from 1969 to 1974 confirms Stone's diagnosis.

68. We do not take quite such a firm view as Ernest Rudd but we are very conscious that external factors can and no doubt will play a very important part in determining both the rate of demand for places and perhaps quite separately the rate of development of universities and indeed all institutions of higher education. Paragraphs 69 to 80 therefore discuss a number of factors (in addition to the question of social class which is dealt with in Chapters 5 and 7) which either separately or together might render the most careful predictions valueless. Many of these factors relate to the economic situation either as determining Government attitudes to higher education or as affecting potential applicants' interest in entering higher education.

69. More than ever the institutions of higher education must expect to be influenced by national economic conditions. A pessimist would assume that in the short and medium term (say until the mid-1980s) the country may not be able to afford significant further expansion of provision for higher education for the 18-plus group, even if this were considered socially desirable and the volume of demand justified it. With Government looking at higher education provision as a whole, little further investment in universities can be expected until all the existing 'spare' capacity in universities, polytechnics and other institutions is judged to have been put to optimum use, redeployed or eliminated. This can be expected to apply not only to physical plant but also to staff, financed from recurrent grant, who represent en bloc a long-term commitment which is difficult to redeploy or reduce quickly. Thus institutions face the prospect of having to operate with approximately their existing amount of real resources and of having to achieve new developments and switches of direction by a compensating diminution of certain current activities.

70. Government is able to manipulate 'free demand' in a number of ways, by increasing fees, by holding down student maintenance grants, by encouraging L.E.A.s to grant fewer discretionary awards, by imposing restrictions on overseas students, or at the postgraduate level by reducing the number of studentships, all of which have the effect of deterring potential applicants. Although the explicit reason for the current increase in fee levels was said to be the need to save £28 million in 1977-8 it is hard not to think that the implicit reason was the need to make the larger savings which would accrue

from the reduction in 'free demand' sufficient, according to the D.E.S., to permit a cut in the 1981-2 student number target from 600,000 to 560,000.

71. Social attitudes to education generally, and to higher education in particular, are unfavourable at present. There is a feeling that education has failed the nation and is not earning its keep. Current opinion seems to dissociate higher education and national recovery, but to associate vocational education and training, particularly for the 16 - 19 age group, with the potential development of wealth-producing industry and greater national wealth. The practical outcome of this view could be a switch of resources away from the autonomous university sector to Advanced F.E. where polytechnics and the new institutes of higher education could be the main vehicles of the new policy.

72. A university degree, no matter in what subject, is no longer as generally regarded as a passport to a well paid job as it was in the 1960s, and graduates are learning to lower their job horizons. Nevertheless, the employment situation is far worse for young non-graduates than for graduates, and economic forces are likely to influence young people to stay on in education and go to university in order to maximise their employment prospects. If this pattern continues it may increase pressure on universities to devote more resources to vocational courses or those which offer the most direct employment opportunities. Linked with the pressure from students for employment-orientated courses is the move toward 'all-graduate' professions. This can be expected to underpin demand for places in the appropriate subjects.

73. Although universities might appear to be rather more insulated from direct government control than institutions in Advanced F.E., in reality there are powerful instruments which permit government to reshape and regulate the size of the university sector radically and with some speed if a firm political decision to do so is reached. The most obvious lever of control lies in the operation of the block grant system, both for recurrent and capital purposes. The recurrent grant can be weighted towards different factors or may have particular restrictions imposed upon it. Again, student demand could be affected by differential grants.

74. The large majority of students entering higher education put universities ahead of polytechnics and there is no sign of a significant change in this attitude. Since public money will probably not be available for the enhancement of polytechnic facilities to any great extent they will continue to suffer by comparison with the human and physical investment already made in universities. If polytechnics continue their academic drift towards the university image they will suffer by comparison in the eyes of those seeking full-time higher education at age 18. If a major national effort is mounted to provide more for the 16 - 19 age group, it may be decided to achieve this partly in the polytechnics by redeploying resources at present used for degree level work.

75. The Open University does not seem to have been a factor in dissuading school-leavers from going to university because they have a 'second chance' later, nor does its limited experiment of taking 18 year olds seem to have made a great impact. If economic factors cause universities to turn more to part-time students there could potentially be some competition with the Open University, but the latter is probably now well enough established for other universities to favour collaborative ventures rather than trying to go it alone.

76. The effects on university entry of changing to comprehensive secondary education in England and Wales are as yet unclear. England and Wales may move to the broader N and F structure in place of G.C.E. 'A' levels in the 1980s. This could have an effect on volume of demand but is more likely to impose a reorganisation of curriculum at the higher education level which could perhaps itself have an impact on demand.

77. Postgraduates make up about 18% of the full-time university population, with many coming from overseas in the sciences and applied sciences. Economic factors may be expected to reduce the demand for full-time postgraduate study. Indeed the latest Government action on fees suggests a policy of reducing the full-time postgraduate effort. Departments will have to turn more to part-time students to maintain their research effort.

78. Trends indicate that more people may be expected to retire in their 50s by the end of the century. Some may want to take up full-time study purely out of interest and this could provide a source of students, probably concentrated in the arts and social sciences, but diversification of type of provision away from the three year full-time specialist courses may be necessary to tap the full potential. Moreover the pace of change in society and in technology will increase the demand for mid-career retraining. Institutions will respond to this by expanding part-time and short-course provision, probably at the expense of full-time training immediately following a first degree.

79. Regionalisation of higher education, which is known to have some advocates in Government and outside, might have incalculable effects as might devolution proposals in Scotland and Wales. If regionalisation were to imply a positive discouragement to students studying outside their region it would almost certainly have the effect of reducing demand. If on the other hand it were linked with incentives for home-based study it might have the opposite effect. If regionalisation brought universities as well as Advanced F.E. under some form of regional control the tendency towards parochialism might stifle initiatives for expansion, while if devolution resulted in a situation in which the traditional flow of English students into Scottish and Welsh universities, institutions and colleges was limited, the consequences for English, Scottish and Welsh institutions could be considerable.

80. An optimistic view of the economy would suggest a repetition of the increased age participation rate of the 1960s. If this were combined with an increased attraction to higher education it could lead to a repeat of the 1965-9 situation. Even if history did not repeat itself in this respect, an upsurge in the economy might be expected to lead to more postgraduates, more discretionary award holders and more mature entrants to higher education. In any event it would be surprising if national prosperity did not raise the proportion of the age group wanting higher education to something more like the rates in the U.S.A.

References

(1) Ernest Rudd, "What a falling birth rate will mean to universities in 1982", T.H.E.S., 19 November 1976.

(2) Gareth Williams, "Reflections on the educational choices of fifth and sixth formers, Trends in Education, Vol. 3, 1976, quoting from J. R. N. Stone, "A model of the education system", Minerva, Vol. 3, No. 2, 1965.

9. Alternative projections of student numbers in universities up to 1994

81. In spite of the many external factors suggested in Chapter 8 which might render any projections valueless, we felt some attempt had to be made to suggest tentative projections of the way student numbers might develop, if only to provide models against which the actual developments could be measured. At this stage the methodology of preparing such projections is in such an unresearched state that we felt it would be preferable to present two alternative approaches each having higher and lower projections. We restricted our projections to the university sector because of the more homogeneous nature of the university intake and the availability of comparable statistics. We recognise that any re-ordering of priorities across the binary line would affect our projections but that seems no more or less likely than many of the other variables noted in Chapter 8.

Alternative A

82. Method

We have used the estimated number of 18 year olds from Chart 3 and the age distribution of university entrants in 1970-5 deriving from U.C.C.A. and referred to in part in Tables 5 and 6. These proportions are used to give a composite single age group of 17, 18, 19 and 20 year olds, weighted according to their proportion within the entry. This number is then multiplied by a factor to take into account the entrants aged 21 or over, which can either be regarded as constant or can be varied. The total so obtained is the entry cohort. This gives:

$$E = \frac{1}{1-M} (N_{17}P_{17} + N_{18}P_{18} + N_{19}P_{19} + N_{20}P_{20})$$

where: E is the entry cohort

M is the proportion of entrants aged 21 or over in that year

N_{17} etc. is the number of 18 year olds in the following year, the current year and the two preceding years

P is the proportion of the entrants aged 20 or under from each of the age cohorts 17 to 20.

From the composite entry cohort can be calculated the number of home undergraduates:

$$U = (ER)_y + a(ER)_{y-1} + b(ER)_{y-2} + c(ER)_{y-3}$$

where: E is the entry cohort

R is the participation rate for that year

a is the proportion of the previous year's entry remaining for the second year

b is the proportion of the entry two years previously remaining for the third year

c is the proportion of the entry three years previously remaining for a fourth year (it has been assumed that all students beyond the third year are in the fourth year, although in fact a small number are in a fifth or sixth year)

and $(ER)_y$ is the calculated undergraduate entry for that year

$(ER)_{y-1}$ that for the previous year, etc.

The number of home postgraduates, G, can be expressed as a function of the number of home undergraduates thus:

$$\frac{G}{U+G} = k, \text{ and hence } G = U(\frac{k}{1-k})$$

where: k is the proportion of postgraduates in the whole population.

The total number of students can then be expressed in the form:

$$T = U + U(\frac{k}{1-k}) + S$$

$$= U(\frac{1}{1-k}) + S$$

where: S is the number of overseas students.

83. Assumptions

Two projections have been calculated using this model. The first assumes the demand suggested in the D.E.S. assumption that the overall age participation rate will recover to 15% by 1981(1) and will then remain at that level. The second adopts an alternative suggestion - that the overall age participation rate will continue to rise between 1981 and 1990 to reach 20%.

In both cases the following assumptions have been made:

(a) That the Robbins principle is maintained and that the entrance requirements for university courses remain broadly the same as for the period 1963-76.

(b) That the age distribution of home undergraduate entrants will remain at the levels found in 1970 to 1975(2). The appropriate mean values are:

Age 17	5.5%
18	59.7%
19	22.0%
20	4.3%
21 and over	8.5%

giving the following values for P:

$$P_{17} = 0.06$$

$$P_{18} = 0.65$$

$$P_{19} = 0.24$$

$$P_{20} = 0.05$$

while M = 0.085

(c) In the low projection, R (which rose from 0.076 in 1970 to an estimated 0.081 in 1976) rises to 0.083 in 1980 and remains constant at this level.

In the high projection, R rises to 0.083 in 1980 and continues to rise reaching 0.107 in 1990, and remains at this level during the 1990s.

These assumptions are equivalent to the D.E.S. assumptions of an overall age participation rate of 15% from 1981, and an age participation rate of 15% in 1981 rising to 20% by 1990, respectively.

(d) The proportion of any entry remaining into the second year is 0.93; the proportion of the entry remaining for the third year is 0.93 x 0.93; and the proportion remaining for the fourth year (or equivalent) is 0.93 x 0.93 x 0.32.

(e) Home postgraduates will be 14% of total home students (having fallen from 15% in 1971 to 14.2% in 1974).

(f) Overseas students will be stable at 30,000, which is the approximate figure for 1975.

Given these assumptions, the following projections are produced:

TABLE 26

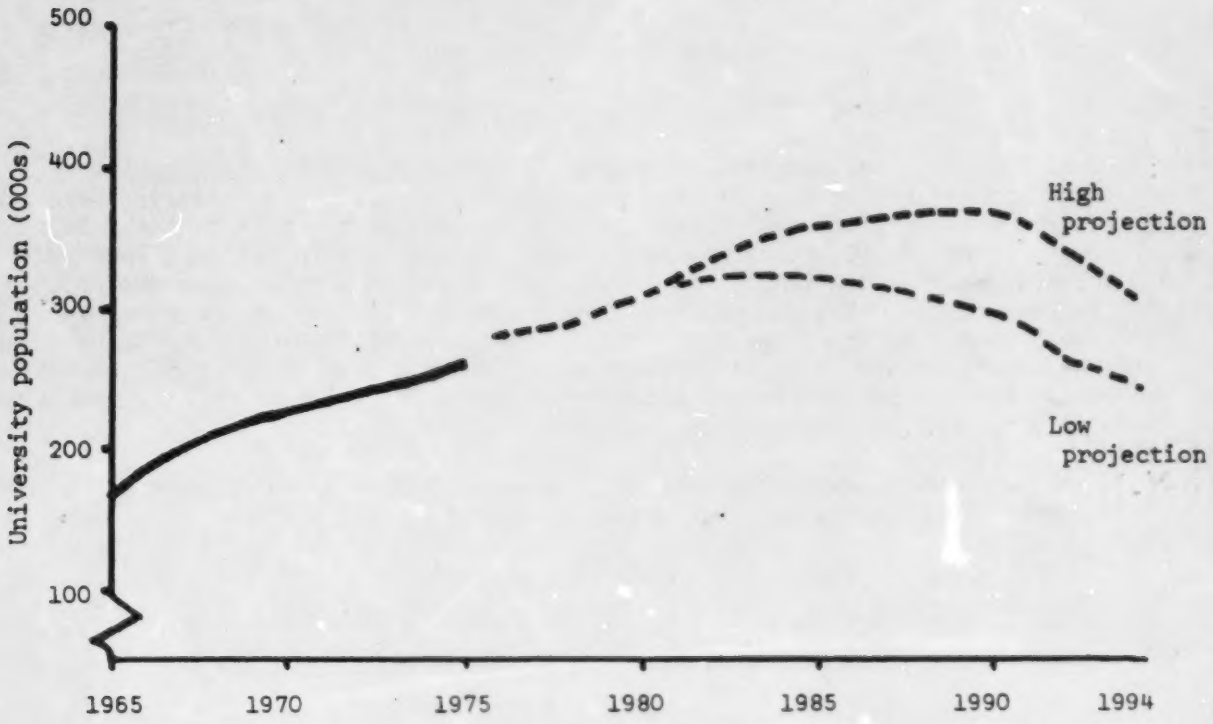
Projection of full-time student numbers in universities to 1994 including overseas students (Great Britain)

Year	Low Projection (000s)	High Projection (000s)
1977	285	285
1978	293	293
1979	301	301
1980	310	312
1981	318	324
1982	324	337
1983	326	347
1984	326	354
1985	323	360
1986	319	363
1987	314	367
1988	309	369
1989	305	370
1990	298	368
1991	287	359
1992	263	343
1993	260	327
1994	249	313

These projections are illustrated diagramatically in Chart 4.

CHART 4

Projection of full-time student numbers in universities to 1994, including overseas students (Alternative A)



The lower line is equivalent to an age participation rate rising to 15% by 1981 and remaining at that level. The upper line is equivalent to an age participation rate of 15% in 1981, rising to 20% for the whole of higher education by 1990.

Alternative B

84. Method

A different approach is adopted for Alternative B. The home student population of universities reflects more than a single 18 year old cohort and is related to a 'source cohort'. The number of home, full-time university students in 1975-6, for example, is a reflection of the year groups of 18 year olds shown in Table 27.

TABLE 27

The 18 year old age group (at 31 December) of the year preceding the year shown

University Year	18 year olds in G.B. population
1971-2	760,000
1972-3	752,000
1973-4	752,000
1974-5	776,000
1975-6	800,000

The home undergraduate population reflects the years 1973-4 to 1975-6, which average 1,000(752 + 776 + 800)/3 = 776,000. The home full-time postgraduate population reflects the 18 year old groups in 1971-2 and 1972-3 which average 756,000[3]. The relative influence of these averages can be approximated by using them in their relative proportions in 1975-6, in which year 14.2% of all full-time home students were postgraduates. The approximation therefore becomes:

$$(776{,}000 \times 85.84\%) + (756{,}000 \times 14.2\%) = 773{,}000.$$

This figure is defined as the 'source cohort' for 1975-6. Although it does not weight for wastage, mature students, for four year undergraduate and three year postgraduate courses and also disregards the fact that the sex ratio is not 50:50, it can be argued that this is a more reliable indicator of the demand satisfied by the 1975-6 university population than the 800,000 18 year olds of that year alone. Source cohorts by sex for the other years were calculated using the same principles and the 1975-6 ratio of postgraduates. The source cohort is in effect a weighted running mean of the population of Great Britain for comparison with university populations which have been similarly smoothed by recruitment over similar years.

85. Table 28 summarises the recruiting of home full-time women students as a percentage of source cohorts for the years 1965-6 to 1975-6.

TABLE 28

The relationship between enrolled full-time, home, female students and the source cohort of the year 1965-6 to 1975-6

Year	Full-time (home) women student numbers as a percentage of the source cohort for the year.
1965-6	5.16
1966-7	5.58
1967-8	6.26
1968-9	6.93
1969-70	7.54
1970-1	8.26
1971-2	8.78
1972-3	9.23
1973-4	9.66
1974-5	10.13
1975-6	10.48

Table 28 reveals a strong trend over the years shown. The linear regression fit after an arcsine transformation of the percentages is very good ($t = 23.2$ with 9 degrees of freedom) and the probability of such a relationship arising fortuitously is very low indeed ($p \ll 0.001$). This suggests that there has been a steadily increasing proportion of women in the source cohort entering university. Charts 5 and 6 summarise the projection of percentages of men and women in universities from their source cohorts on the basis of linear extrapolation.

CHART 5

Projection of percentages of full-time, home, female students in universities from source cohorts in the years shown (high projection)

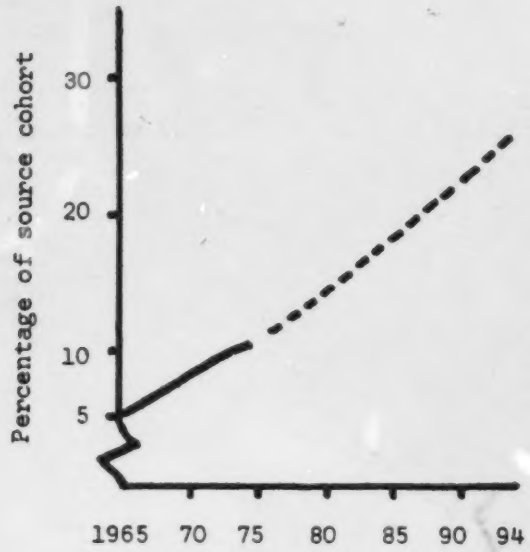
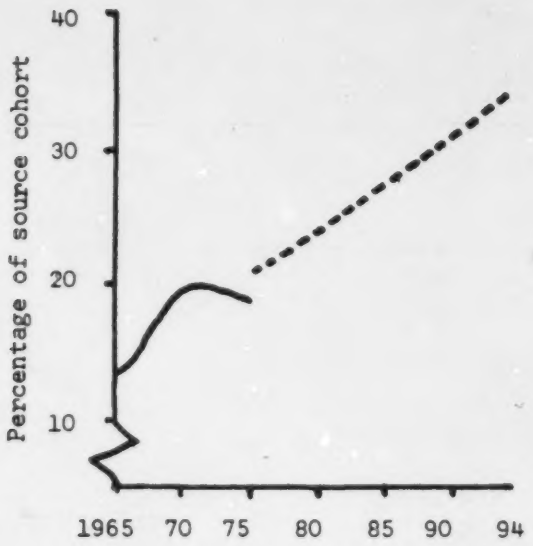


CHART 6

Projection of percentages of full-time, home, male students in universities from source cohorts in the years shown (high projection)

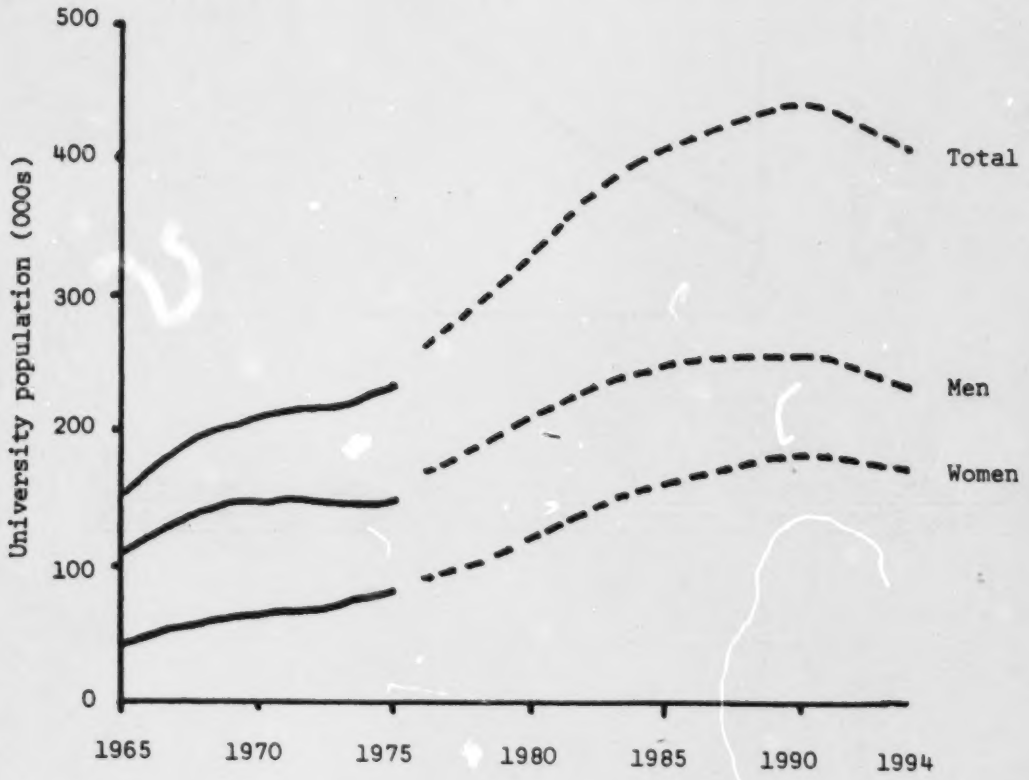


These Charts suggest a steadily increasing proportion of women in the source cohort entering university. In the case of men students there is much less certainty about the extrapolation because there has been a much less determined trend of late years. On the other hand from 1965-6 to 1971-2 the percentages of the male source cohort grew much faster than the percentages of the female source cohort. Over the period covered by Chart 6 there was positive growth

($p < 0.001$) although over the most recent five years shown, if considered in isolation, the proportion has steadily declined ($p < 0.05$). When the projected percentages are applied to source cohorts calculated from Chart 3, full-time home student numbers could grow as shown in Chart 7.

CHART 7

Projected population of full-time, home students in universities if the percentages in Charts 5 and 6 apply (high projection)



86. Chart 7 shows a highly optimistic projection of the development of the university system for the next two decades. Two doubts about the validity of the projection must arise:

(a) is linear extrapolation justified?

(b) why not take the last five years in which the proportion of men entering university has declined - a different picture would result.

A closer inspection of the women's percentages of Chart 6 suggests that linear extrapolation may not be justified. A 'least square fit' taking the dx/dy trend into account is much better and the resultant extrapolation is shown in Chart 8. This suggests that if the trend continues, it becomes asymptotic to 12.6% of the source cohort value.

CHART 8

Projection of percentages of full-time, home, female students in universities from source cohorts in the years shown (low projection)

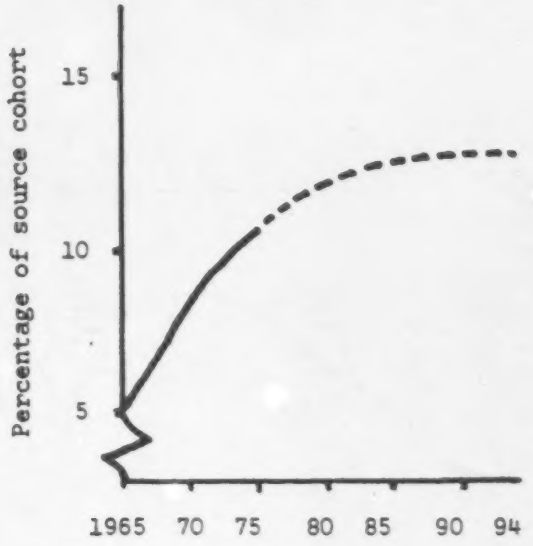


CHART 9

Projection of percentages of full-time, home, male students in universities from source cohorts in the years shown (low projection)

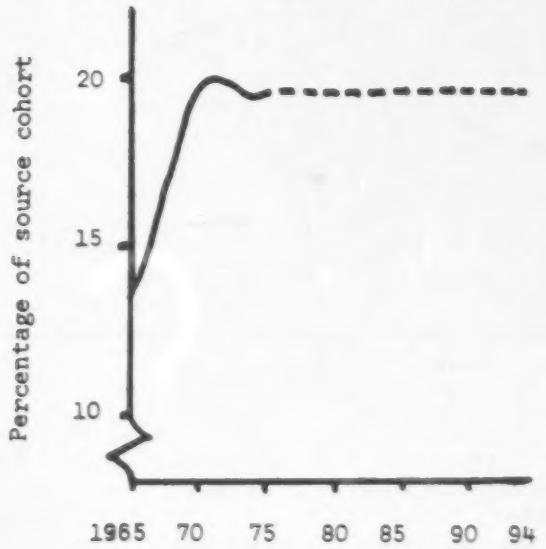
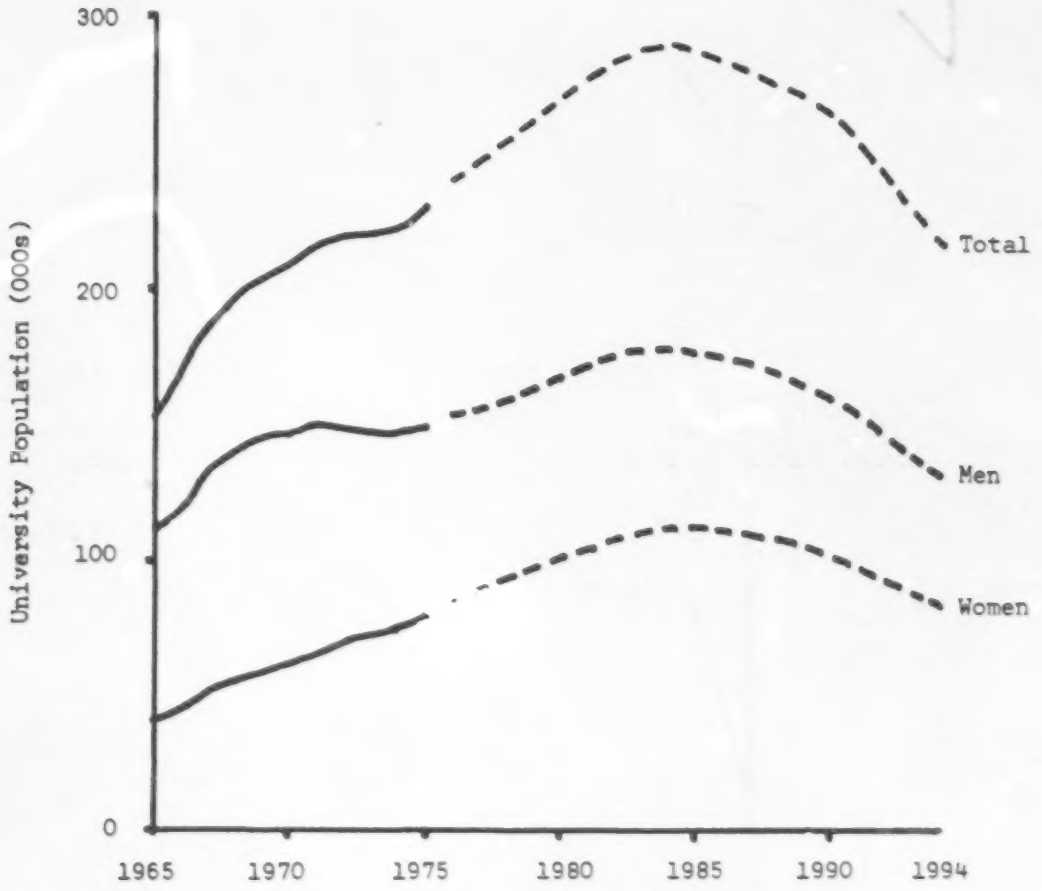


Chart 9 shows a similarly critical approach to the percentages of men. The rapid growth from 1965-6 to 1971-2 was followed by a downturn to 1975-6. Recent unconfirmed indications are that this trend may have been reversed in 1976-7 and preliminary reports of U.C.C.A. recruiting for 1977-8 show a growth of applications greatly in excess of the growth of the source cohort. Firm statistics are not yet available and because of the uncertainty, the

extrapolation of a trend is unjustified. The mean percentage over the last five years for which statistics are available was 19.5% and this has been the compromise figure adopted. This is illustrated in the Chart as a pecked line. If the percentages of Charts 8 and 9 are applied to the source cohorts a much more pessimistic view of the size of future university populations results as shown in Chart 10.

CHART 10

Projected population of full-time, home, students in universities if the percentages in Charts 8 and 9 apply (low projection)

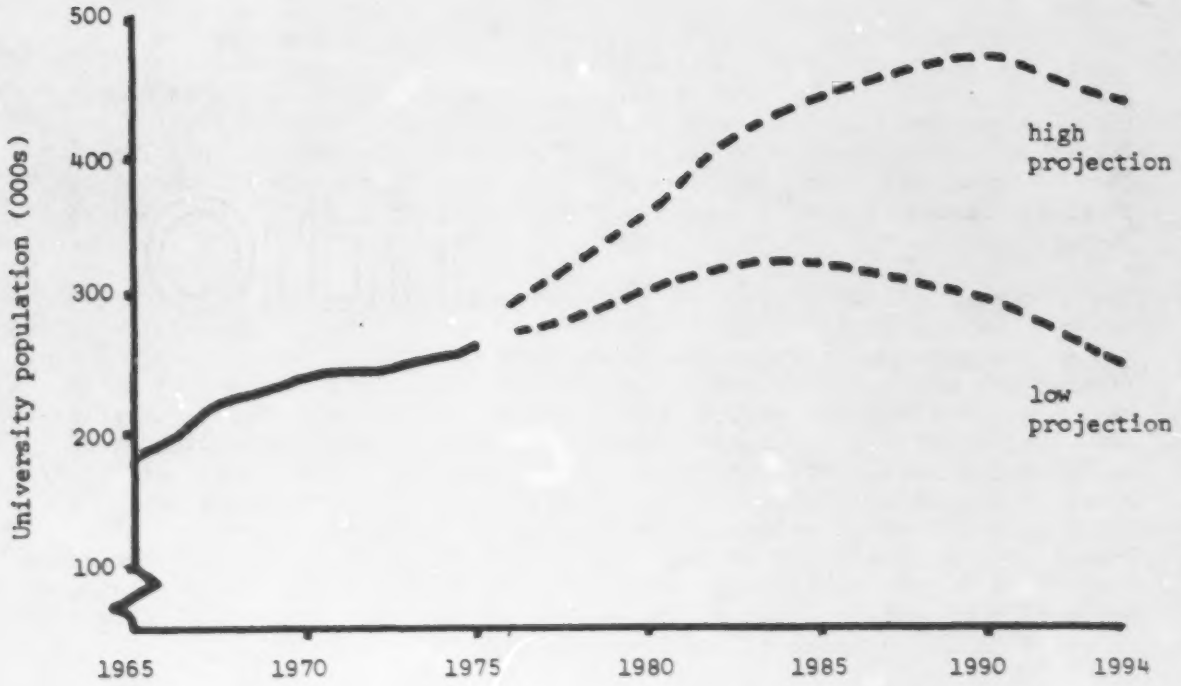


87. So far we have excluded overseas students from the Alternative B calculations. In order to make Alternative B comparable to A we have added 30,000 for overseas students to the numbers produced by Charts 7 and 10. Chart 11 therefore sets out the projection derived from Alternative B.

88. A comparison of the projections deriving from Alternatives A and B and set out in Charts 4 and 11 illustrates the difficulty of making projections without a good deal more research into methodology. More significant, however, than the actual numbers projected are the shape of the projections and the close similarity in particular of the shape of the low projections on both Alternatives. The implications of these projections are discussed in Chapter 10.

CHART 11

Projected population of full-time home and overseas students in universities 1965-94, Alternative B



References

(1) The figure on which the Government calculated its forecast of 600,000 in Public Expenditure, Cmnd. 6393.

(2) As calculated by U.C.C.A. (i.e. at 30 September) and not as calculated by the D.E.S. (i.e. at 31 December).

(3) We recognise that there may be over-simplifications in such a broad-brush treatment. Obviously a proportion of postgraduates fall outside these source cohorts but there is no evidence that the numbers are rising or falling. On the other hand the percentage of home post-graduates, male and female, of the total number of home students has remained remarkably constant between 1969-70 and 1975-6 at an average of 12.38% for females and 15.74% for males. Any future variation of these percentages would make only a marginal impact on the overall projections. Even if the size of the home postgraduate population was reduced by 20% at some time in the future it would reduce the size of the total home student population by only 3%, which is trivial in the context of the uncertainties inevitable in the projections as a whole.

10. The implications for universities and for higher education in general

89. We believe there are grounds for concluding that higher education is at a watershed as important in its way as that which precipitated the Robbins Report. It is not surprising that this should be the case. It is more than sixteen years since the Robbins Committee on Higher Education was established and we are rapidly approaching the furthest limit of the Committee's statistical projections. The educational system has undergone considerable changes and in particular the structure of higher education has fundamentally altered. Moreover it is eighteen years since a British Prime Minister could campaign at a General Election on the slogan "You've never had it so good" and the optimism of those days and the uncritical belief in the economic benefits of higher education have sadly evaporated.

90. The complexion of the student body is changing. We have noted (Tables 3, 5 and 6 and paragraphs 17 and 21) the trend towards older students. In 1974-5 25% of the entrants to higher education were aged 21 or over and the U.C.C.A. figures for university entrants show how the proportions of older students have increased over the period 1972-5. In 1975 40% of university entrants were aged 19 or over. Since staying on for a third year in the sixth form is increasingly rare the only conclusion to be drawn is that more university entrants are arriving after having had an interval between school and university. There is evidence (Table 7) of an increasing proportion of female applicants and admissions. The percentage of women admitted has grown from 29.7% in 1967 to 36.4% in 1975. Overseas students form an increasing proportion of higher education numbers with the percentage of all undergraduate entrants to universities rising from 3.7% in 1967 to 7.2% in 1975.

91. From the demand point of view we have seen (Chart 1) that the staying-on rate at school in England and Wales continued to rise steadily up to 1973, declined in 1974 and again in 1975 and is now climbing once again. A similar trend seems to be apparent in Scotland. Perhaps more important, however, is that new research on the social mix of sixth formers (Table 19) and university entrants (Table 18) shows that in spite of social advances since the Second World War, Social Classes I and II (the middle classes) provided a quite disproportionate number of students at both levels. At the school level, in the one survey published (paragraph 44), the children of fathers in Social Classes I and II occupied only 23% of school places at age 16 and 60% at age 18. At university, the percentage of entrants with fathers in Social Classes I and II has actually increased from 44% to 51% between 1970 and 1975. These figures must all be treated with some care because of the technical difficulties of ensuring the accuracy of this kind of data.

92. It is clear from paragraphs 38 and 39 and 62 to 65 that the preponderance of Social Classes I and II in higher education is likely to increase further, rather than to decrease, because of the effect of the declining birth rate in Social Classes III, IV and V. Locked away in projections of university and higher education student populations in the future there is a general social question of some significance. Consideration of the general implications is not in our brief but it is difficult to believe that they will not feature on the political agenda at some time in the future.

93. There can be no doubt that the implications of the falling birth rate and the reductions in the 18 year old age group are potentially severe for higher education. The alternative projections in Charts 4 and 11 suggest that the effects may be mitigated in various ways. There is a certain amount of

pessimism evident in current official predictions owing to the trends in 1973 and 1974, the last two years for which published statistics are available but we argue (paragraph 23) that these two years are probably not a reliable guide to the future. Indeed it is an indication of the lack of published research on this whole subject that they should have caused such official concern.

94. Both high and low projections in Charts 4 and 11 agree that if 'free demand' is permitted to operate there will be a continued expansion of student numbers in universities up to 1983-4 but after then the low projections on both Charts indicate a progressive decline in numbers to 1994-5 when the numbers could be back at the level of the early 1970s. There is less agreement in the high projections. Both foresee a continued growth in numbers up to about 1989-90 but whereas Alternative B projects only a relatively shallow decline, Alternative A shows a steep decline. All four projections suggest a fall in numbers at some point, either from 1984 or from 1989 and three suggest the fall will be severe. This would be a situation unprecedented in the post-War period and we would echo James Hamilton's(1) view that it would "pose an excruciatingly difficult exercise in planning".

95. From the point of view of Government and the D.E.S. the difficulties are obvious and we do not for a moment minimise them. If, however, the run-down of the colleges of education is seen in Government as a 'dry run' for the rest of higher education, we suggest that Government should think again about its methods and procedures. But it would be short-sighted for people in higher education not to recognise that if the decline in numbers suggested by these projections comes about, higher education would have much less political capital to draw upon than it had ten years ago and, assuming that unemployment levels remain high, the community at large would see few justifications for giving more favourable treatment to those who work in higher education than to those who work in other sectors of the economy.

96. If it is difficult at the Governmental level it would be considerably more so at the institutional level. Already we have seen, even in a period of steady growth, that variations in demand from subject to subject (Tables 14 and 15) and between one year and the next, can cause serious problems in individual institutions. The national shortfall in applications in science and technology is now a fact of life and has had long term effects on the subject balance within institutions and on the way resources are distributed. If such fluctuations were to be combined with an overall fall in student numbers the problems would be infinitely magnified and institutions' powers of responsible self-government would be stretched to the uttermost.

97. It is premature, however, to take quite such a gloomy view of the future. Tables 1 and 2 and paragraphs 14 and 15 indicate that the numbers of people engaged in the pursuit of higher education are actually considerably in excess of the figures normally used in official statements. The extent of part-time study in higher education is obscured by the way statistics are presented and although no official statistics are available to support this it is fairly obvious that the demand for this form of higher education is not so dependent on birth rate or age participation rate statistics. Developments in this area might cushion some falling off in full-time numbers. Table 2 suggests that we have been underestimating and underselling the size of our higher education system.

98. From a strictly university point of view, however, the evidence of Tables 11 to 13 and paragraph 25 suggests that if a 'free demand' system is allowed to persist, applicants will continue to prefer to go to university rather than into Advanced F.E. Perhaps the best guide to the future can be found in Tables 9 and 12 which illustrate the distribution of school leavers with 'A' levels in Science. Throughout the period covered by the analysis there was a national shortfall in Science and Technology candidates and the Advanced F.E. sector seems to have had little success in raising its percentage of the market of suitably qualified candidates. All the evidence seems to point to the fact that the great majority of the best qualified candidates in all subjects take up places in universities. If this situation continues the Advanced F.E. sector will become increasingly vulnerable when student numbers as a whole begin to fall. It might well be the case that in overall terms the university entry could show little or no decline while the Advanced F.E. sector absorbed the whole effect of the reductions in numbers projected in Charts 4 and 11. The current reduction in teacher training places and the re-organisation of colleges into polytechnics or into merged institutions or colleges of higher education might then be the first steps in a long-run scaling down of the whole sector.

99. We do not think that this justifies any complacency in universities. Trends may change and in any case the Government may feel it has to restrict the free play of the market. The implication of the various projections is that there is to be a long term decline in numbers generally and it is unlikely that the university sector will survive unscathed. This should encourage universities to explore other, perhaps so far only lightly tapped, sources of student numbers - mature students, part-time degrees and post-experience courses.

100. We conclude (paragraph 49) that the Robbins principle has so far been maintained. Competition has not overall become more severe for applicants with two 'A' level passes. Admission to Science and Technology courses is still relatively easy and the expansion of the polytechnics has probably compensated for any increased competition for places in Arts and Social Studies in universities. The increase in the staying-on rate at school taken together with the sharp increase in the numbers of 18 year olds up to 1983 will mean in the short term a considerable expansion in the demand for places.

101. Our immediate interest is how the Government will react to the projected bulge in student numbers over the next five years. One way would simply be to 'tunnel through the hump', that is hold down expenditure so that additional staff could not be recruited, thus ensuring that when the numbers begin to fall the run down will be less drastic. The latest White Paper on Public Expenditure[2] suggests the following projections:

	1976-7	1977-8	1978-9	1979-80	1980-1	1981-2
Student numbers in H.E.(000s)	515	519	519	522	541	560
Recurrent finance (for H.E. and F.E. combined)		-1%	+1.1%	+2.3%	+3.9%	-

but the financial allocations for 1979-80 and 1980-1 are stated to be subject to reappraisal. Since in recent years every allocation has been subject to reappraisal, the 1979-80 and 1980-1 figures look particularly vulnerable. We have noted above (paragraphs 48 and 70) that the Government has a number of regulators which it can use to dampen demand. These could no doubt be used to reduce the 1981-2 target yet further if the national economic situation required it. The fact remains that it looks as though the growth in demand

will continue until 1984 and if the regulators are used and if, broadly speaking, the recurrent grant is not allowed to grow, successive cohorts of students will find it increasingly difficult to gain access to higher education. Already the D.E.S. estimate of student numbers in higher education in 1976-7 (Table 20) is at 520,000, that is 5,000 higher than the numbers for which funds are provided in that year. It should also be remembered that every time one of the regulators is used so as to reduce demand the date when the peak in student numbers is reached is thereby brought forward.

102. Even if 'free demand' on more or less the present basis is permitted, our alternative projections show that the period of expansion in universities is coming to an end. This is bound to have an important psychological impact. The great majority of university staff have been recruited since the late 1950s and have only worked in an expanding system. Their experience so far has been of growth, new academic developments and new buildings. New universities, new departments and new courses have sprung up fuelled by increased student numbers. That era seems now to be drawing to a close. The pattern is now set. The small universities will not in the foreseeable future grow to medium size and the medium-sized will not be able to catch up with the larger. Within universities promotion prospects are bound to worsen unless the U.G.C.'s 40% rule is extended. It is easy to draw too black a picture. Undoubtedly some departments will grow and new departments will be formed, but probably only at the expense of other departments. We believe that universities should be thinking about these problems now and not be caught in the state of unpreparedness that has characterised the colleges of education. We have at least five years to adjust to the new climate and it is important that we use the period to best advantage.

References

(1) Permanent Secretary, D.E.S., January 1977.

(2) Public Expenditure to 1980-1, H.M.S.O., Cmnd. 6721, 1977.

11. The need for new machinery

103. As a Group we were set up to review the facts about enrolments in higher education and report back to our colleagues. We had not intended to submit formal recommendations. Nevertheless as our enquiries have progressed it has become clear to us that the state of knowledge about future numbers in higher education, the crucial data necessary for a university to try to plan its future, is very limited. Information is poorly disseminated in an incomplete form and its publication too long delayed to be of effective use. Several different bodies are responsible for collecting data often, it appears, in isolation from one another, and incompatibilities of timing, of publication and of presentation render the task of someone charged with responsibility for interpreting the likely trends almost impossible. We shall hope in a later report to make some detailed comments on the presentation of education statistics.

104. For the last two years or so the state of the national economy and the organisation of cuts in public expenditure have deflected interest away from the future to concentrate over much on present problems. We believe that higher education is approaching such a potentially difficult period that more time and resources should be spent on thinking how the problems are to be dealt with. At this particular time when the age participation rate appears to be rising again, the statistics of higher education are of crucial importance in obtaining any picture, however uncertain, of future trends. We believe that this matter is of such public importance, to the institutions of higher education and to the official bodies that represent them, as well as to Government, that new machinery should be established to review annually the out-turn of information on student numbers and demand. We do not think that this information should be restricted to the D.E.S. or the Government generally but should be freely published and accessible.

105. We have no concluded view on the precise nature of the machinery necessary. We note that the B.M.A. has recently called for a new Commission on Medical Manpower to deal with problems not too dissimilar from ours[1]. We would not wish to formalise the machinery quite to this extent. Rather we would wish to involve all the constituent parts of the higher education system, with the appropriate Departments of Government, in a joint standing committee set up solely to monitor statistics relating to the demand for higher education, and to ensure that the right questions are being asked and answered, the appropriate data sought and the information necessary to the constituent parts of the system published regularly and with as little delay as possible. Unless some machinery like this is established the feed-back of what is actually happening to the rate of demand at this crucially important time will not occur quickly enough or in an atmosphere of sufficient trust. Institutions and official bodies will be unprepared for the difficult problems which may confront them and Government will render itself liable to accusations of lack of openness at just the time when accessibility of information is of the maximum importance.

Reference

(1) B.M.A., Evidence to the Royal Commission on the National Health Service, Table III, Chapter VIII, 1977.